



SEQUENCE LISTING

<110> CAIRNEY, JOHN
XU, NANFIE

<120> DIFFERENTIALLY-EXPRESSED CONIFER cDNAs, AND THEIR USE
IN IMPROVING SOMATIC EMBRYOGENESIS

<130> 7648.0023-00

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<150> 60/239,250

<151> 2000-10-11

<150> 60/260,882

<151> 2001-01-12

<160> 339

<170> PatentIn Ver. 2.1

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<211> 567

<212> DNA

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aagatcacat	accaggtggt	ggagcagatt	cgatagatat	tgaagatatg	aagccaagga	180
gtggagcagt	tattgaaaag	ggcacaaaaa	aatttgccat	ttacaaagat	gaaaatgggc	240
tgattcaca	atactcgga	atatgcccac	acatgaactg	tattgtgaaa	tggaatccta	300
tagactcaac	tttcgattgc	ccctgccatg	gttcaatggt	tgataatctg	ggtcgatgca	360
tcaatggacc	tgccaaggcg	gacctatttc	ccgaagatta	acgatagttg	tttgtacatg	420
taattatctt	gatattgtat	atatatgtat	ttaaattata	cagtacaata	aatccatggt	480
tgcaggctat	ttctgcttga	taatttagct	ccagatttat	acataaccag	tttatttggc	540
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<211> 276

<212> DNA

<213> Pinus taeda

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aaaaacgcca	tagcgacgga	tgactgtaaa	tccttaggga	cggatgactg	taaatcctta	180
ggttggaaga	ttacaaacga	catatgggtc	tttcaatttt	cagatttctg	taagacttac	240
atttcaaaga	ctgtttggat	gggcaaaaaa	aaaaaa			276

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<211> 267

<212> DNA

<213> Pinus taeda

<400> 3

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aaaatctaaa gagtgtatag tatcagtggg tttgtatttc ctagtgtgcc tacaataacg 120
atggggattc accagttttt gtagaatttg caatcatcgg atgacaattt caaagttttc 180
tctaagtcac ccgcattgat atcgagaagc cttccatttt caattattta atatcagaaa 240
atcttttcag ttggcaaaaa aaaaaaa 267

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<210> 4

<211> 589

<212> DNA

<213> Pinus taeda

<400> 4

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atgctcgagc gccgcagtgt gatgaattgc agaatcggct ggtactcacg ggctagagaa 180
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ctcccaagga cgaaatcagt tctttgtgcc ttctggtgat atcacttcaa acaaaaggca 360
acagttctgt gatttcatat ggtttgtcac tgaatatatt gttgcagatg ttctctacta 420
ttttttatct gctttcaagt gattatttgt tgattcccca tggatagtta tgctaatacag 480
ttgcatttct cttgtaccag tcaacaaaca aaaatgcttg taggaatcca ttactattta 540
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<211> 431

<212> DNA

<213> Pinus taeda

<400> 5

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ctgtttaacc taataataat acaaaggaag cattttaccc aactctttta cgtaataata 120
ccaaagagtg gaatgcttta ttgaccagca agaccttgaa atttttataa ccaatgccca 180
tcaacagagc ctttcttaaa aaacgcaaag cccagctctg tcaccttatt agttagtata 240
aactgacatt cttccaagct tgtgtgcgca gaaacaataa agaacttcac cttgggttaa 300
agaacgtgcc atgaagaaaa cgtcccaaga aaaatgaaat ggctccttcg accattcagt 360
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tacaagcggg c 431

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<210> 6

<211> 434

<212> DNA

<213> Pinus taeda

<400> 6

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tgaaacattt tatgcatgtt attgcctccc aaggacgaaa tcagttcttt gtgccttctg 180
gtgatatac ttcaaacaaa aggcaacagt tctgtgattt catatggttt gtcactgaat 240
attttgttgc agatgttctc tactattttt tatctgcttt caagtgatta tttgttgatt 300
ccccatggat agttatgcta atcagttgca tttctcttgt accagtcaac aaacaaaaat 360
gcttgttaga atccattact atttattttt agacaggtaa acgtgtagct aattgttctg 420
gcaaaaaaaaa aaaa 434

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<210> 7
 <211> 540
 <212> DNA
 <213> Pinus taeda

<400> 7
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 ggctagagaa aaggcacaag cacttcttcg tcatttttagg atcagaggca ttcaggtata 180
 ggaaggggtg tcagataggc agatggatcg gcatttttgcc cagtcatgaa acattttatg 240
 catgttattg cctcccaagg acgaaatcag ttctttgtgc cttctggtga tatcacttca 300
 aacaaaaggc aacagttctg tgatttcata tggtttgatc ctgaatattt tgttgcatg 360
 gttctctact attttttatc tgctttcaag tgattatttg ttgattcccc atggatagtt 420
 atgctaataca gttgcatttc tcttgtaacca gtcaacaaac aaaaatgctt gtaggaatcc 480
 attactattt attttcagac aggtaaaagc gtagctaatt gttctggcaa aaaaaaaaaa 540

<210> 8
 <211> 794
 <212> DNA
 <213> Pinus taeda

<400> 8
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 tttaatggag tttgaggcag ggatggccta tgataaacct gaaaatgccg gtgcaggtaa 180
 tgagaatttg ccagagtttt gctctctttc aaatgagtag tcgatgttat tgaaagatcc 240
 atggagtttg gaggatagca ctggtttcgg aatccgaagc ttagctgctg tcaggaagca 300
 gtcttgata ttggactatc tccatgattc tgctgtagat aatcgctgtg aaaaggattt 360
 tgccgagcag cacaaggtag aggaagagga ggattgtttg agaaggcttc tttttgaagc 420
 cacagatgat cagctctgga ggcttcagag tctttgcagg atacagaagg tctgtttcct 480
 ctggattccg tgggtagcca tgattgcacg accttggtgc aggatgagag cattgttcag 540
 ggcgctgctt cttacttcag aatttgggaa caggatgatg gtcacaagga tgccaaaatt 600
 catgaagatg gcattggttt tgtgtatggg agtgggatct cggattggat tcggagggct 660
 cctcgaatc aatctgagtt ttctgaatct gttgaatttg aaagctctat gttttcactg 720
 taatttgggt ctttttaatt tcttcctatg taatttgggt gtttctaatt tcttccttca 780
 gcaaaaaaaaaa aaaa 794

<210> 9
 <211> 330
 <212> DNA
 <213> Pinus taeda

<400> 9
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 gccttgctct gtctgttttc tttgatcttt gatgccaaagc aagttgaatg tgatcactaa 120
 atgttgctgg cagtagagct ggagatgtgc tgtctctttg gtgtcattag cacagaagct 180
 attggagaaa tgattattat ctgtttgata acttctagag catttttctg cttccaattc 240
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 gatgtaaggt tgtgtggcaa aaaaaaaaaa 330

<210> 10
 <211> 515
 <212> DNA
 <213> Pinus taeda

<400> 10

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ccgtcggttt cttgatctcg gagccaagca agtggatgtg atcactaaat gttgctggca 120
gtagagctgg agatgtgctg tctctttggg tcattagcac agaagctatt ggagaaatga 180
ttatgggtatt ccaccatata caggtaaaca agggaaaaca gagctcagct tctagtatgt 240
tgtatgccct gctctgtctg ttttctttga tctttgatgc caagcaagt gaatgtgatc 300
actaaatgtt gctggcagta gagctggaga tgtgctgtct ctttgggtgc attagcacag 360
aagctattgg agaaatgatt attatctgtt tgataacttc tagagcattt ttctgcttcc 420
aattccacaa ggtggaaagt gcaaggatgt ttactttctt aaactgtact tgccttgtat 480
ttgatgatgt aaggttgtgt ggcaaaaaaa aaaaa 515

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<210> 11

<211> 331

<212> DNA

<213> Pinus taeda

<400> 11

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tgccctgctc tgtctgtttt ctttgatctt tgatgccaaag caagttgaat gtgatcacta 120
aatgttgctg gcagtagagc tggagatgtg ctgtctcttt ggtgtcatta gcacagaagc 180
tattggagaa atgattatta tctgtttacat aacttataga gcatttttct gcttccaatt 240
ccacaagggtg gaaagtgcaa ggatgtttac tttcttaaac tgtacttgcc ttgtatttga 300
tgatgtaagg ttgtgtggca aaaaaaaaaa a 331

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<210> 12

<211> 241

<212> DNA

<213> Pinus taeda

<400> 12

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ggtactccac tagaccgggt aggggtctct catggttttg cgacttaggt taggtgtcct 60
gttctgttaa tgattttgag gttttgtaat tgtgagtatg tttccagggt tttgaacctg 120
ggtactcggc ctttgttgga atgtagtctg gttaatttat atgtatatgt aaccttgggg 180
tttcgagccc agttctctgt tcttcttgaa atgaaatgcg atttgttcta aaaaaaaaaa 240
a 241

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<210> 13

<211> 247

<212> DNA

<213> Pinus taeda

<400> 13

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atatatacgt atggtattcc acagcatgaa ctcttcgaca ttatatgctt gttatagttt 60
ttaagagagg agacttacct cacacatgta cagcttttta ttgtcgtgct ttcagttgat 120
ggatgattgt tgtagtcttg tcattgggtg gacaattttc atcatcctaa agatccaaga 180
attcatgtgg caagaaactt taataaagtc aaatataatc cgatgacgta accctaaaaa 240
aaaaaaa 247

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<210> 14

<211> 197

<212> DNA

<213> Pinus taeda

<400> 14

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ggtactccac tagtgatcga ttctctgtat gtgacgctgc gcggcggcctt atagecgttc 60
actgagaatg tacgggtatat tatgattgat gtgatggatt tgctccgcag cttcggctgt 120
tgtatctgct cacttcggcg tataatatga atatgttget tcttcagaga gatgaacttc 180
cccctaaaaa aaaaaaa 197

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<210> 15

<211> 177

<212> DNA

<213> Pinus taeda

<400> 15

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atagatcatt ttaaagtttc agtgatttga atctaattcc actgcatttc ctgcgaaaact 60
ggcagtcaaa tagtattccc tctttcagtg acaggctggc aggtgtttca ttcttataca 120
aacatgatta tcataattcc attaattcat ggcgttttct ttgccaaaaa aaaaaa 177

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<210> 16

<211> 475

<212> DNA

<213> Pinus taeda

<400> 16

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tttttttttt ttagggagaa aggtaacttc agccagcttt caaaggcaac acctacaaaa 60
ggggtgactg agaactcaga cacagacgac aagtgatcat tcggggccaga tttttgttga 120
gagagttgta gtgtgttaatt gattcatttc atacatttga tatgcaagcc tgtacaatag 180
cctgtgactg ttaagggcat tcttttgtct cctgttget atttgggttt ccggtgtgtt 240
cattttcact tatttttgtg ttttagctgg aagaatttga gagggtagaa ttgtgtcatc 300
gctatggctt gtgcatgact catgagccag cagttgaaac ttttatttat taagttataa 360
tactatgtct tgtcaattct caataaaaaga tattttatgc tgttgggcag catctaaaat 420
gttttgtatg ttagcataaa atcccatttt ctataagttt ttgccaaaaa aaaaa 475

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<210> 17

<211> 592

<212> DNA

<213> Pinus taeda

<400> 17

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agcaggttca gtcagacgtg taaacgacgc catgatgtat acgaactcat atagggcgat 60
tggccttttag atgcatgttg acggcccgcg gtgtgatatt cgcagatcgc tttttttttt 120
tttttagcat ggtgcgcgat gagctgatag cgatgatgaa gaccaagacc accaaaggaa 180
gattcttcag agcaaaaagct acggagacag aaccagagga ctcaaagccg gaatccattg 240
gtgaggtacc tgcaaatgtg tgatggacta actaagaagg ctcttgaga ggaccatta 300
agcacagtgt ttttaagtcc caaattctgt tgcaattccg ttgaaaatca tttttacgat 360
tttaggtatg atgtgtgcaa ttttaaagtt ggaattattg tgggcaaagg ctataagtga 420
ttgtctaate catttaattt attatctttt gactaagagc atatctaggc tggaagaaat 480
tagggcacat taatgtaagt tttgaatttg aacattctgg gttttgcaat gcaaaacacc 540
acaaatattt tataatgtta gaggtgtact ttttctggcc aaaaaaaaaa aa 592

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<210> 18

<211> 204

<212> DNA

<213> Pinus taeda

<400> 18

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gggtactccac caataatact tgtctgttct tgcttccttg ctgateccact aagcagatta 60
tttctgtcca cccacttta gagtctcagt ttgtaaagca ctccctagga gctaaactca 120
tttccaatgg attaaagcac tccataggag ctaaactcat ttccaaggga tttttgtcca 180
tttctctgtg ctaaaaaaaaa aaaa 204

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<210> 19

<211> 347

<212> DNA

<213> Pinus taeda

<400> 19

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atgtatacat atatgtggta ctccacacac tcaaataaca gcatcacaat caaaacaaga 60
aggcggccag aaagcttta aatgctaagc ctacaggtaa tattcacaac tgcattaagc 120
accccgcttc ctagtctga agaagccaga aagctttaaa atgctaagcc tacaggtaat 180
attcacaact gcattaagca ccccgcttc tagtaggcta gtactaggac taggaccgca 240
ttaccagttc cttatcttc tactcatcct ctacaggaaa aactatgact aaaactgcat 300
taccagttcc cttatcttct caactcgtcc tctacaaaaa aaaaaaa 347

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<210> 20

<211> 376

<212> DNA

<213> Pinus taeda

<400> 20

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ggtaatttcc acccaccacg ggctttttca attaaccat ttctaccact ccacattagg 60
gttctaagtt ttgtgactca ccccaattt cgctgatatt ttgcattgca gcttggttat 120
ctacaggaaa tggctaata gtactttcag aatttggttg cttctgtaca ggaaatggat 180
aatcaatcag tacttctata ctttaagttgc ttacgcgggg atcagagcct tacttcagaa 240
aattgaatac attttcttct ttgtgtatgt atcaggcatg gaattatatg tagcatgcca 300
tggaatgctg atttactaga ttatctttta atttaataca tatgttgctt actaatttgt 360
ccacaaaaaa aaaaaa 376

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<210> 21

<211> 332

<212> DNA

<213> Pinus taeda

<400> 21

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ctgaagaagg ccagaaagct ttaaatgct aagcctacag gtaatatcca caactgcatt 180
aagcaccggt cttcctagta ggctagtact aggactagga ccgcattacc agttccctta 240
tcttctactc atcctctaca ggaaaaacta ggactaaaac tgcattacca gttcccttat 300
cttctcaact cgtcctctac aaaaaaaaaa aa 332

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<210> 22

<211> 238

<212> DNA

<213> Pinus taeda

<400> 22

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gggtactccac tattagattg atgcaagacc aactgatcat ggctagggtg tattcaagca 60
tttcccaggc taggaataat cttgatttat accatgaatt gatgcttcgt attaaagaat 120

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gtcaacgtac attgggtgag actaatgccg attctgatct acctcaaagg taataatttt 180
 tgcattagct gcttctaaat caagagtagt aagtgcctcc atttgcaaaa aaaaaaaa 238

<210> 23
 <211> 170
 <212> DNA
 <213> Pinus taeda

<400> 23
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 ttgcgtattt ctaaaagatg cactattttt tgtccgagtg taggttttga attcattgta 120
 acattcagca atattaattc aggggtagca tttctggcaa aaaaaaaaaa 170

<210> 24
 <211> 152
 <212> DNA
 <213> Pinus taeda

<400> 24
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 ttctgggtgt aaacgacctg atagatgata tgcaagtgcc aggaggcaat atctagcaga 120
 atacgtacaa attaaattgc caaaaaaaaa aa 152

<210> 25
 <211> 197
 <212> DNA
 <213> Pinus taeda

<400> 25
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 aagttcaata gagatgtcat ccataaatat gggatgaat ctcttccttc cctctccgcc 180
 caataataaa aaaaaaaa 197

<210> 26
 <211> 199
 <212> DNA
 <213> Pinus taeda

<400> 26
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 gaccttacc cccaaaggat taattgtact ttggcttaac cacaaaacct gattcaaaaa 120
 atgtgaagtt tttaccatt aaattaattc ccaaagtaa ctacaaattc cagagtacat 180
 ttttacccaa aaaaaaaaaa 199

<210> 27
 <211> 455
 <212> DNA
 <213> Pinus taeda

<400> 27
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 agcactctcc gtgccgcaac ttctggccag gctttccctc aatgtgtgtt tgaccactgg 120

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gatatgatgg gatctgatcc attggaacct gggtcccaag ctgggcagct tgtgactgat 180
atccgtaaga ggaaggggtct taaggagagt atgactccct tgcagagtt cgaagacaag 240
ctgtagagct ttgctatggt tgcattgctgg atgctgtcaa gattgaggaa cctccgagta 300
ttaaaacaca gttttgtgtg ctaggactat ttaaatttat gctattcacg tatttttgtg 360
atctgttatt tatgttattc acgtattttt gattggaaaa tactttttac aagtcattcca 420
ttaatctttt aaatgtttaca taattctctc ttgtc 455

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<210> 28
 <211> 93
 <212> DNA
 <213> Pinus taeda

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<400> 28
aagcttggtgta ccgagctcgg atccactagt aacggccgcc agtgtgctgg aattcggctt 60
ggtactccac tataacaacat caaggcatat ctg 93

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<210> 29
 <211> 28
 <212> DNA
 <213> Pinus taeda

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<400> 29
cttttcttcg tgcttttcgt ggagtacc 28

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<210> 30
 <211> 156
 <212> DNA
 <213> Pinus taeda

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<400> 30
ggtactccac aaagtgagat gaggatgatg aggtcaaaca cgtaaattgac aatagctatt 60
atttccccac ttgtttgtgg ctgtgtatat tatacttcat tgtcaggact tttgtatggt 120
tgaagttgca aggttttggc aaaaaaaaaa aaaaaa 156

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<210> 31
 <211> 421
 <212> DNA
 <213> Pinus taeda

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<400> 31
ggtactccac ctccagctgc ttatccaagt actacggata gttcactact ctattatgct 60
tctgccaaagt gaaccagaag gcttctgttt ctacactagc aaactgatag ctcgagcatt 120
ctcatttact aaggatgata attcaaaaatt gtaacattgc aaacatcagc aaacatcagc 180
atcaactctg ttactattac aagcaatgga tgcgtcgtg atgctgcggg agagtaaatt 240
tttagtttac tgcggttggg aattgagtag gttgacttac atttctgttg taaagccggt 300
gtcgggcatt gtttatctgg ccgagttagc gccaggaagc taaatgtacc aaatatttat 360
ttttatttta ttaagaatat aaaatttagt cgtcttctgc tgcccaaaaa aaaaaaaaaa 420
a 421

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<210> 32
 <211> 163
 <212> DNA
 <213> Pinus taeda

<400> 32
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 attttccgag gaaggcattc taagccattc ccaccgtact ttaataaaat aaaaacaaga 120
 agatagtaaa gctaagctac aaccttccgc caaaaaaaaaaaa aaa 163

<210> 33
 <211> 554
 <212> DNA
 <213> Pinus taeda

<400> 33
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 ctctctctct agtgaccgaa atcaatctca ttatatatgt cattatgcat tcattcccac 180
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 aatattgaaa aacttccgcc aagctaaaaa ggcacttaaa gcacctggat ttgaaccagg 300
 atttcccacc ccgatgaggg ggggtgtctt tccattgaga cgatgcctta ctggcgagac 360
 cctgtggggg tctttatagg tgacttaata ctttaagtata ggacttaaga gagaggaagc 420
 gaccgcctct ctgatcaagc ctttacgtgc gacgtgcccc ggtaaaggct gatctcacca 480
 aataattcag agaaagaaga tgactccaca gtagcgaaac tcctacattg tcttacatat 540
 cgtaacaagc ggtc 554

<210> 34
 <211> 557
 <212> DNA
 <213> Pinus taeda

<400> 34
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 aagggacttt acctccagga tctcaaaact tcttctctgt aaaatgagca ttgtaataat 180
 tatatcccag gcttatgttg ggaatattca ataaatgctc ccttcattct ttaaaaaata 240
 agtaaagaca gcctgaatgg gagccacgtt ctcatctctc tttctctatg caaaatgtat 300
 tgtgtaattg ttgtgtacta gtagtccaag agcaaataag tagttgggta atgggctaaca 360
 tatttcttaa atttgtaact gttaagataa acattgaaca aggaaaaaga ttcgtaactg 420
 aaatgtaaag tcatttgacc ctggatagtc aatgacaatc ttattcacag tgtaataagt 480
 aattcataac gagatgatta ttatgaaatt atcaatagcc tgctatatca ctttatgttt 540
 atgatccaca agcggtc 557

<210> 35
 <211> 373
 <212> DNA
 <213> Pinus taeda

<400> 35
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 ctgctactgc ctcttgatt ccaggaatcc tagagctggg agtatgagtt ggagatgatg 120
 aagggtgtctc ttacctattt cttgaagtgg atggagtgtg gaaaatcgaa cttctagctt 180
 cagctaaaaa cttccccta gaatctcttg ctctatgcat atcattttta ttttttcttt 240
 caagataggg taataattct ctttctgac ttccaggctc ctctaggtgc aagaagagag 300
 catagtcaag gaactattta accaataact ttctcttttc tgatcctcca gttcactcta 360
 ggtacaagcg gtc 373

<210> 36
 <211> 485
 <212> DNA
 <213> Pinus taeda

<400> 36
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 gcgctactat gacattttat aggatgtctg agtgtaaaat aatgggtactg gttggtgcaa 120
 agaactctgat gtttggtatg atggaactat aaatagatgt tattttctga tccagaaggc 180
 tttcctttacc aactgatttc atcttcagaa actaaaagct cttgaacttg tgtagatggg 240
 gcttggtcat tgtagtttaa atgcattatg tagtggcaaa aaaaaaaagt tatagcctac 300
 gtttcaaatg gatttgctcg acaatcaaat gaattacaat tgaatattca tgtataccca 360
 aattttaaat gtagaatgac atcatcaatg tagacaaaca ccactgtgct tgtccttgat 420
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 cggtc 485

<210> 37
 <211> 500
 <212> DNA
 <213> Pinus taeda

<400> 37
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 gaacaattag acatcttgta cgcaagagaa ttacgatcgg ccatataaaa accccaaaga 180
 gaagaaagtg ttctgaaatt ctcccagaaa acagtcttat gccaccgatt tgtcttttca 240
 acatgcattt gcaatgaagt ctttggattc ttactgtgag tgctgatcag caacggattt 300
 tcgatctgta tagctctgcc gattcctggt taaagcagct aagagttagg catccagatt 360
 ttgagttttt tgcattctcac aatgtttgaa tacatttcaa atccattggt ggagtaacct 420
 aacaacaact gtactcttct tcctatttct gaagccctct gccagtttaa ggcagagaac 480
 tgagttatct acaagcggtc 500

<210> 38
 <211> 398
 <212> DNA
 <213> Pinus taeda

<400> 38
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 tggagcggga ggaagagttt tcttgctgat gatccaatcg gagtcgaact gccaccgctg 180
 gatgaagggc ggcgaggaaa tcttgggggg cagaggccccg tcggcgtagg aaataagaaa 240
 cgatttgata tggaacgaaa gggcccgtcc agggttcgat ccccggcagg gcagccagcc 300
 ccgaactaaa caaaacaata agaacaaca gcaaagtaaa agaaagcacc agaagaaaca 360
 gcagcagacg aagagtaagg agctgcccac aagcggtc 398

<210> 39
 <211> 179
 <212> DNA
 <213> Pinus taeda

<400> 39
 gaccgcttgt aatccacagc attttcaata acttcctgag gtgacatcca cctccactca 60
 gaaaactcgg ctgcatctgt cccatcacca gctagattga tctcactctc gtctcctcta 120
 aatttttagga ggaaccattt ctgtgcttga cctttccatt cgcctcccca caagcggtc 179

<210> 40
 <211> 221
 <212> DNA
 <213> Pinus taeda

<400> 40
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 ccaaaaattt agctgtgaca tcaaaaagct caaccctac aatgaatgta accttaattct 120
 agaaaattga tccatgatct ccactgaatt ttctcgttca tccTgaagaa tgagaaactt 180
 aaatgtaccc gattccctca accaagcccc cacaagcggT c 221

<210> 41
 <211> 473
 <212> DNA
 <213> Pinus taeda

<400> 41
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 gaaaactcgg ctgcactctgt cccatcacca gctagattga tctcactctc gtctcctcta 120
 aatttttagga ggaacctgta attggtaggT gcttgtcata aatgatcaag acgaccgcga 180
 tcgtgatgcc aagcttagtc tttctactta ctgtctatgt aatggTcaag ggcccttctt 240
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 gttttggtag taaactgggc tcaatcattt ctgttgcttg aactttccat tgcctcctcc 360
 cacaagcgtc agccgaattc tgcagatatt catcacctgg gggggccgct cgaacatgca 420
 tctagaaggc caatccctca tatgaattct attaaatccc tggcctcgTt tta 473

<210> 42
 <211> 339
 <212> DNA
 <213> Pinus taeda

<400> 42
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 atcactaagg ctaaggTact atccagccaa actgatctca aataataatt tcataagctt 120
 aaataaatag tccagccagt agatggagcc aaaaagccat agaagcttca aatacttTgt 180
 gtatcaatct ctctctgtt aagggaggta tcagatcaga agcactaatc aaatgcatac 240
 ataaatgcag tagactgcaa taaaacaaaa tctgcagata gcaacagagc gcttaacgaa 300
 cggaaaagag ttttaactga tctatcacag gatcgcacc 339

<210> 43
 <211> 303
 <212> DNA
 <213> Pinus taeda

<400> 43
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 aatttggaata tttgtgggca taaagctcca cagtgtaggT gggctaattc catgaaacat 120
 tactcttcaa aacatcatac aactgaggTg gaaattgcaa aagattatta ctggatgctg 180
 atctgggact aaggtggTgg ccattggtaa tgttgTgtt cagaaatata tcttcatgat 240
 gatcagtagt tgcattcggT tggagaagt ataaattctg gtaatttTgtc ttgggatcgc 300
 acc 303

<210> 44
 <211> 274
 <212> DNA
 <213> Pinus taeda

<400> 44
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 acagtgtatt gcattctcaa taatcagaac tgtactggct aatatcgctg tgcctgtcgt 120
 ttcattttcc tgtcatccgc atagggcccc tcattttccc tatcttgagc aaatccaaga 180
 aatgcaagaa aaccaaaaag gaagaaaccc ccagaggaag agtccgaaga ggatatgggt 240
 gtcagtcttt ttgactagat tggaggatcg cacc 274

<210> 45
 <211> 269
 <212> DNA
 <213> Pinus taeda

<400> 45
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 aaacttttgt caagatccgg atccagattt tcctcaagta aaactaatct cattaaatcc 120
 aagccaatct ctagcaaaat tcaaacactt tttattaaat ccaagccata tatctggcaa 180
 attcaccgaa atatgtacaa tcgcagcgca ttgcttggct tgcgacagaa accatattcg 240
 cacgtcttca taaggctttg gatcgacc 269

<210> 46
 <211> 240
 <212> DNA
 <213> Pinus taeda

<400> 46
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 tgttcttcgt agaccaagtt cctgtgagag tccacaggca cactgaggct acaagcgatg 120
 tgttccctaa agaacagggg atgtacatgt tttccagcat ttggaatgca gacgactggg 180
 caaccagggg tgggcttggg aagacaaact ggactgccgc tccattcagc ggatcgcacc 240

<210> 47
 <211> 242
 <212> DNA
 <213> Pinus taeda

<400> 47
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 gacaaactaa cgaggaagag acatacggcc atgccccccag atgagaccat gaggaggaga 180
 cgtcgtccgg ctttatccat gagccataca gcaactgcag tcatgatgac ctggatcgca 240
 cc 242

<210> 48
 <211> 213
 <212> DNA
 <213> Pinus taeda

<400> 48
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gcagcaagat ctctgaaata taagctctgt aagaccaatc tgaagtgtg atgatcaata 120
tgaactgaaa catcatgcca caatgggctg gtacttgtgc aaaattctct ggcattgtgat 180
gagaatcaca tggttacctc tttggatcgc acc 213
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<210> 49

<211> 235

<212> DNA

<213> Pinus taeda

<400> 49

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cccagtttgg aattctaaat aaaactgttc aatatttgaa ggcctctgat atcacagaga 120
ctgatattag aatggaagca tgtagcaacc ctagaagctt tcgcataaag ataccagatt 180
aattcataag aaggatctct cgttcaccag tcacatatca cagtcggatc gcacc 235
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<210> 50

<211> 216

<212> DNA

<213> Pinus taeda

<400> 50

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gggcagaggg atgtgccaag ctgaagaaga taccgggggt ggagcaagcc acaaaaacttc 120
gagagttaga tgtagtgagg tgccctcagt tagatgagct gccagtatg gaattattga 180
catctttgga cggcttgtgg gcaaagggat cgcacc 216
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<210> 51

<211> 462

<212> DNA

<213> Pinus taeda

<400> 51

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ggtgcatcc acatagtttg aatgcaagga aattgcacat acttcgtggg gaatttcgat 60
ggcaaatcag tccaggtaaa tgacttctca acataggtcc aaaactcttt catagaccag 120
atcttgaccg tggtgtccat gccacagctt gcaatacgat atacatctga aggatgaaaa 180
tctacactga gaacttcatt gcgatgtccc ccagctccag caaatatcaa aatgcatatt 240
ccagtttgaa cattccagag tcgtacagat tcattcttgc tagcagataa aataagggaa 300
ggtttcagtt gcttgggtcc ttatttcatt cacagaactc catggccaac gaaactctta 360
tggacttttc atttgccat ccattctcga attatacatt gtgaccgcag ccactaataa 420
tggggaacat cactcgccctg cccacttatg tgtaaagaa tc 462
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<210> 52

<211> 246

<212> DNA

<213> Pinus taeda

<400> 52

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tcaattcttc aaggctcagca ttctttatta tctggaaact tcgctagctg tgtctataat 120
cacgaaaccc agacggggaa ctaataggcg atgaagtttc tcttatccat aaccgttgca 180
aagatcttac acggagtttt ctcttcttct gcgtggcttt tctttcccgat attctcggat 240
cgacc 246
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<210> 53
 <211> 527
 <212> DNA
 <213> Pinus taeda

<400> 53
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 tcacccctgg atcggttata caaggatttg ggggtggctaa agtgatactc tcaaatcacc 120
 cagacttcag agagggtgac tttgtatctg gtactatagg atgggaagag tacagcataa 180
 taccaaaaagg gagtaactta agaaagatca aatatacgga cgtaccactt tcatattttg 240
 tgggtgtttt aagaatgccc gggtttactg cttatgctgg attctttgaa gtttgctctc 300
 ctaaaaaggg ggagcatggt tttgtctctg ccgcttcagg agctgttggc cagcttggtg 360
 ggcactttgc aaagttgatg ggttgctatg ttgttaggga gcgcgggtaa caaacagaag 420
 gctgatctgc tgaaacataa aatgggcttt gatgatgatc tccaccataa cgaggagcat 480
 gacttcgatg tggctttaaa aaggcatttt ccagatggga ttgcacc 527

<210> 54
 <211> 273
 <212> DNA
 <213> Pinus taeda

<400> 54
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 gccgttattc tctccttttt ccaaaagggc cttttctgcc agaaaacctt aaatttctga 120
 ctggtttcca agtccaattt ttaaaatatg gattggttta ccattgaagg caccaccatg 180
 ctctgaaagt tatggactgc acttgcccca gtgctatatt tagtccagat agcgcttgtg 240
 tctctaaatg catctccctg ctcgatatac acc 273

<210> 55
 <211> 220
 <212> DNA
 <213> Pinus taeda

<400> 55
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 gccctgccag agatatggga ggaagaagat gcagagaaca ccaaaaatgt tgtgggatca 120
 agaggagcgg atgcaactat agaaactgtt gtcacggcat aagccatcgc ctcattgaat 180
 gagggaatgg aggactagac aaatcccttt ggatcgacc 220

<210> 56
 <211> 483
 <212> DNA
 <213> Pinus taeda

<400> 56
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 ctccaggagg tattgagaag tcaatttctc aagggtctaca gtgacagaag gaaccatctt 120
 gacaatctta tcaggtttcc tgctctggtt aaacacttca actttgacag gacgagagaa 180
 tgtgactaat tcatcttctt catcagactc tacatcttcc tgtttcaaga aacaaagata 240
 ctgatcatca ctagggcaag aattgatgat tttgatatct ctggagaagc cagtgtttac 300
 attggtttgc ttcattggcca ccagtctatg gcataaagct ttcccgaag ggtacttggc 360
 agatttaaca gagcccaacg ttatatttaa ggcccatctc tttgctctca aaatttttct 420
 tgcactctct ggagaatata aaaccccttg gtgtctcttt ccacaaacac cttctcattg 480
 atc 483

<210> 57
 <211> 472
 <212> DNA
 <213> Pinus taeda

<400> 57
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 ctccagagga tgcaagaaaa attttgagag aaagaagatg ggcccttaaa tataacgtgg 120
 ggttctgtta aatctgcca gtacccttca ggaaagtta tgccatagac ttggtggcca 180
 tgaagcaaac caatgtaaac actggttctc cagagatata aaaatcatca attcttgccc 240
 tagtgatgat caggaagatg tagagtctga tgaagaagat gaattagtca cattctctcg 300
 tcctgtcaaa gttgaagtgc ttaaccagag caggaaacct gataagattg tcaagatgg 360
 tccttctgtc actgtagacc ttgagaaatt gacttctcaa tacctctgg aggatgagt 420
 caatttgatt ctaaagcttc ccaaggctgc agctgcccaa tcggatcgca cc 472

<210> 58
 <211> 246
 <212> DNA
 <213> Pinus taeda

<400> 58
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 gccaatagaa gcgacacttg ctgtgccaaa gtatcgatag gctactccc atggctcaat 120
 catatatagt tggggcccat ctctatcata acctccaagg ataactccag atccaaaagg 180
 ccttaaccac caatatagtg tgcacaaatg cacataactg gcaacacgtt cacaaagttc 240
 cttaat 246

<210> 59
 <211> 255
 <212> DNA
 <213> Pinus taeda

<400> 59
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 gcacagacaa ccatatgac tttttttttt tttttttttt tttttttttt ttttttttag 120
 caaaattcaa acacttttta ttaaattcaa gccatatatc tggcaaattc accgaaatat 180
 gtacaatgc agcgcattgc ttggcttgcg acagaaacca tattcgacg tttcataag 240
 gctttggatc gcacc 255

<210> 60
 <211> 368
 <212> DNA
 <213> Pinus taeda

<400> 60
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 gttagtggcc caacactgcg aggtgctgcc atttccattc cattcacaga cgtcagtgtt 120
 gaaattcata taggaagcca caaagggtga ggaagaccaa tctattttca ctgcccccc 180
 ttgagttgcc cactggtctc cgctccatat gctagagaat actctcattg cctgctcatt 240
 cggataggga acgcctatgt tttcattgtt tgcaataact ctgattggca aaccatcaac 300
 gaaaatcgca atttgctggg ggttcagag aatagagtaa ttgtggaaat ctgctgtagg 360
 atcgacc 368

<210> 61
 <211> 354
 <212> DNA
 <213> Pinus taeda

<400> 61
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 gtacgataat atgcccttca gccaaagcgaa gtatgacttt agtatggcca ggcagcagta 120
 tgaaagcaca tcttgtttct tccaggctcg catgtatagt ctccggaggc taacaatgtc 180
 acccaaagct aattgcgcaa acggaactcc tctgctgac tcccgggaac ttaggcggaa 240
 ccaccctgaa tccactattc tcaccgcgca tttcatccct ttggtgaacg ccgctgcctc 300
 tggtagatac agagctggct tgtctccact ggaacccct tccggatcg cacc 354

<210> 62
 <211> 364
 <212> DNA
 <213> Pinus taeda

<400> 62
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 gaagtgttta tggatcaatc atctcataaa ttttggtaat atataacaga agattatggc 180
 atccagttag gatggtagtt tcattgaggt atagtaaaaa ctacactagt cttgtgttgc 240
 caccacttt tcagagaagt caggaggtct cttgtgaat cattgataac tttatgagt 300
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 gcac 364

<210> 63
 <211> 381
 <212> DNA
 <213> Pinus taeda

<400> 63
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 aagctcaaat cctatgtgct ttacaccttg actgcatact ttctcattgg aaaatacatc 240
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<210> 64
 <211> 382
 <212> DNA
 <213> Pinus taeda

<400> 64
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 cttgaagaat atgagcgccg atgtgaacag atccacaacc tggagttaaa attggaggaa 120
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 cccacattga ggagtttggg taccagaatt aatgaaactt tcagccacaa ctttcaaggg 240
 atggtgtttg ctggagaagt tacactagat gaacatggca tggattttga caagttatgg 300
 tattctaata aaagtcaagt tcaggcaaac tggacagttg cagggtattga attgctcatc 360
 atcagctctgg agggatcgca cc 382

<210> 65
 <211> 367
 <212> DNA
 <213> Pinus taeda

<400> 65
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 cttcagaggc cagatgttat ttttggtgct gatcgaaactg cgaatgtggc atttgcagag 300
 ccactgcgtg agcctgacga agagatcatg gcccgaggta agtcagtgtt gttgatggga 360
 tcgcacc 367

<210> 66
 <211> 298
 <212> DNA
 <213> Pinus taeda

<400> 66
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 ttgtctaacc agactgtatt gttgccaaag ttatgggaat tccggctata tttttgtctt 180
 cgaaaaaaaa aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa tcataggggt gtctgtgcgt 240
 gtctctcttc ttacacaaca aatttgtgtg ttttgcaact atcccatggg atcgccacc 298

<210> 67
 <211> 425
 <212> DNA
 <213> Pinus taeda

<400> 67
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 tgctgggcca tctgggggat gagcaatagc atcggaggcc aagttcttct gcagccgggc 120
 accaaatgcc atgtggaggt ctgaatctta gtttggaggt cgaagtttca atccccttgt 180
 gtttactctg tttctggttt tatttgaata atttgagcaa tttaatgtgg gtccttagtg 240
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 gagattcaat tctatcagaa ttccatggtg gtttaaattc cettgtactg ttgatctacg 360
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 gcacc 425

<210> 68
 <211> 335
 <212> DNA
 <213> Pinus taeda

<400> 68
 ggtgcatcc aagcacttac gactcccaac aaggacggga aactctaaaa tcggaaaaat 60
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 atattagccc acatgccata atgacaaaca aatatgagaa cactgcctac aggtttgcca 180
 aaagcatggc cctcactttt gccctgaggt catcaggagc ttctgaggct cgagaaggag 240
 aaaaagattg tgtcacttca ggagctgagg cctccacatc ttttaatgat ttcgcagcag 300
 gcctctcttt aatgttttct ttagaggatc gcacc 335

<210> 69
 <211> 711
 <212> DNA
 <213> Pinus taeda

<400> 69
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 ctgcctctt gcacagttca accgcaataa cattgggttt tacaaaaccg attacctgtt 180
 taacctgctg tgcactcttt ttcgaaacat gacaagttcc aacaagataa acttcggccc 240
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 ccgttcgtct cagcgatact gctaaagatc ggagacccg aaccagtttg atgcttccat 420
 tgccttaaac atccagagtt ttccttcgac cttaaaccct aacaagatta ctgatttctg 480
 gtccggatgt tcaactgtctg ttatacttct cacaactctg tcacactcct gataatcttc 540
 ggtattgaac ttcattgaat tgaattttcc ttctcattgg aattcaattg taccttgtaa 600
 atgtctggat cctacactat accaatatct acaggtctga gtattttgcc tgtagtataa 660
 ttatctttcc ttcgggtctg tgtttccgta ttattcgtgt aggatcgcac c 711

<210> 70
 <211> 622
 <212> DNA
 <213> Pinus taeda

<400> 70
 ggtgcatcc cgggggggagg ttgatgttct gagagaatca atgaagggat ttcagctgag 60
 cttgcctttt tgaagacgga atgcgaacaa ccagtcattt gcaatagcga gaattctctt 120
 aagccactgc ctgctgggga ggcgagttct gattccgggtg attgcatcac tcaacggcag 180
 cagcagcggc agaacccttta gtttcccatg acaggtctct ctgtacaagt atcttctctg 240
 tatgatctaa ttccgggttg ttcgattatc gtgatgtctc ctgtattgac atattagcag 300
 aatattacca tgatacgatg ttaagtggca tggtttatgc cctgcatggt atgttatgga 360
 ggaggtgagg catgtggcgc tcatgggagg gccacatgg tccatggacg tcttattaaa 420
 cgcatagtcg tgaatgaaaa tagttcaata cattcaaaat tccaacacaa tttcattaca 480
 atggaagtga cttcgacttg aatgttcatt gaagcatttg catgcacaaa caaagtatac 540
 tagattagaa gaaaattgca aaaaaggaca ttgtgccctt cttagtgaat atataaagat 600
 gttcttcatg ctggatcgca cc 622

<210> 71
 <211> 471
 <212> DNA
 <213> Pinus taeda

<400> 71
 ggtgcatcc caatagccaa tattgcctcc aagatagcct agactgcctt ttgcatagtt 60
 ctagaagcca gtcacccaac ctcccaaaag aaattgcgca atctttccca tcagtttccc 120
 gggatgtgt tctgtcattc cccgaatttt ctttggtttt cactaataga tttctttcca 180
 tgcacattgc ttgtctccag atcttttagg tgttcatcca tctcttagta gtactagatc 240
 gatggcttcc aagagaacag gatcatatga cactgttgga aatgtagctg gagcagcagt 300
 tgagcaagtg tctcttagtc tatctatcta tgaaagatac acattgtttc tagacatgga 360
 tatcaaattg aaattgccag aagtccatga aacatttgcc gccttttgaa gaaaggctcc 420
 aaactgtcag ggttcgttga acatcacatg ttctcgtgt ctgatcccc c 471

<210> 72
 <211> 418

<212> DNA

<213> Pinus taeda

<400> 72

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ggtgcatcc tcagggtaat ggcctggctg aatcaagtaa caagaatctt ataaccatta 60
tctaagaaga tagtaggaga taacaagcgg tcttgggaca acaaaatcaa gtgcgctttg 120
tgggcagata ggataactaa aaagaaagcc actggtaaaa gtccctttga acttgtctat 180
ggcatggatt tgacattaca tgcccatctt aaattactag cttaccaact ccttcaacat 240
ttttctagt ataaaggtgt tgtccaaaac atgggttgatc aaattgtgca gttggatgaa 300
atccgcagga aagattttga tagtgcaaaa atcagctctac cattaagaaa atctttgaca 360
aatcttctcg gtctagatat ttacagggtg gagatatggt tttactatgg attccacc 418

```

<210> 73

<211> 416

<212> DNA

<213> Pinus taeda

<400> 73

```

ggtgcatcc tgcaggctta gatagtttct ggcctcctct gaaagaagca cgagtaggtg 60
tctccacatt aggttggcct gatcccttgc ctgcacttgc agcttgtctt acaacatctc 120
ctatgctttg atccaggctt ttcactgaca taacttcagg ggcttccttc tcccagggcc 180
gtgctgccat ccagcgttct agccagctcc atccccaatt tggcttggtt gggtaattt 240
ccatcagcat aggatgagct gctcctcgtg tgcttttcaa tgactgatga gaatatgcgt 300
tatgccaatg cectttctcg cttcatggct gcttcttgc tgccttgcaa actagcctca 360
atttctctt tggattgcaa ctgtcatcca atcctttgct tccatactgg atccac 416

```

<210> 74

<211> 346

<212> DNA

<213> Pinus taeda

<400> 74

```

ggtgcatcc caaatgaaca ttcaacattc gatcatgtca agcgctaaat gccttggcag 60
cttaaaagct agactccgca agtgaccctt ctgacttagt acacatatta agactcatca 120
agggtccaat tccatgaaaa gaaattttta aacggttaca tattcacaag aacagcacga 180
gatttcccag atagtcaacc accaacttgc cctatcagcc caaatattac tcattccatg 240
ttaaaaatag caaattttcca gatagaatgt cgaaagagat cttcatgcac catatatgga 300
ctcttaaaac cagccaaaat ctatactgcc atgcttggat cgcacc 346

```

<210> 75

<211> 346

<212> DNA

<213> Pinus taeda

<400> 75

```

ggtgcatcc tggagagaga agcaaaaagc ctaccatcta aatctacatt ctaaatacaga 60
tatctttact gtgaaaggaa ttgaatgctg cttcagatat cctacaagaa ttaagaagaa 120
aagaatgata aactccaaat caggcagatg gctcagaatt tcccgagct tcattttcga 180
cggcctccac aacaccaacc tcggcaggac gtattactct gccatgaagt gtatagccag 240
gcttcaaaac cacagccaca ctgccaggct gcttactagc atcttgaact tgagatactg 300
ccatgttgca tatgaggatc aaactcttca tttattggat cgcacc 346

```

<210> 76

<211> 286

<212> DNA

<213> Pinus taeda

<400> 76

```

ggtgcatcc ccagaggtta ttttgggttc aaagtattct acaccagttg acatgtggtc 60
atttgcttgc ataatttttg aactggctac aggtgatatg ttatttgatc ctccagagtgc 120
agaaggttat gaccgcatg aggaccacct tgccctgatg atggagcttc ttggaaaaat 180
acctcgtaag atcgcttag gtgggagcta ttcacgggaa ctttttgaca ggcattgggga 240
tttaaagcac attagacggc ttcggtattg gcccttggat cgcacc 286

```

<210> 77

<211> 395

<212> DNA

<213> Pinus taeda

<400> 77

```

ggtgcatcc taaactgtat gtctccacaa ttgtcttcaa tatagaagca gctacgcccc 60
tcctaagtca tcataagtta aaaacttcat ctttccaata caattaaact atctagctta 120
tcagtttggg atagagatac aaaattacag atagattagc gaaactgtgc cacaaaacct 180
cttcaaaatt agaagcatga ttgtctacaa ctccacttca aaaaggagct gaaccagtcc 240
ttcgaagggt gtgcttttgt tgtggtggag gtacagaagg cagcaatttc tccaagaact 300
gctgtttttt tagcctctca ttctctctt taagctgcat cacttcattc tctagctcat 360
ttgtgtatgc ctgctttctt gccctggatc gcacc 395

```

<210> 78

<211> 308

<212> DNA

<213> Pinus taeda

<400> 78

```

ggtgcatcc gagtgatggc acaaagaaaa gcaatgatag aaaacaaaga acaggtagct 60
cagaaggctc agcaacttag agagtcaact tcgagttaag gagggcggga gcaattggca 120
gattcttcca aatttgtcaa gatctcttgg catgagatga ccttatagga tgttaaggag 180
caagaggatt ctaggaataa tgccaaggat aataagacta aaaggatgct tcaagaccag 240
gtggcaagga aggcttctaa ttcaaaggga gttagcaacg gcaacagatg caattctagg 300
atcgacc 308

```

<210> 79

<211> 307

<212> DNA

<213> Pinus taeda

<400> 79

```

ggtgcatcc tagaattgca tctgttgccg ttgctactcc ctttgaatta gaagccttcc 60
ttgccacctg gtcttgaagc atccttttag tcttattatc cttggcatta ttcctagaat 120
cctcttgctc cttaacatcc tataaggcca tctcatgcca agagatcttg acaaatttgg 180
aagaatctgc caattgctcc cgccctcctt aactcgaagt tgactctcta agttgctgaa 240
ccttctgagc tacctgttct ttgttttcta tcattgcttt tctttgtgcc atcactcgga 300
tcgcacc 307

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<210> 80

<211> 521

<212> DNA

<213> Pinus taeda

<220>
 <221> modified_base
 <222> (391)
 <223> a, t, c, g, other or unknown

<220>
 <221> modified_base
 <222> (428)
 <223> a, t, c, g, other or unknown

<220>
 <221> modified_base
 <222> (433)
 <223> a, t, c, g, other or unknown

<220>
 <221> modified_base
 <222> (443)
 <223> a, t, c, g, other or unknown

<220>
 <221> modified_base
 <222> (471)
 <223> a, t, c, g, other or unknown

<220>
 <221> modified_base
 <222> (494)
 <223> a, t, c, g, other or unknown

<220>
 <221> modified_base
 <222> (497)
 <223> a, t, c, g, other or unknown

<220>
 <221> modified_base
 <222> (512)
 <223> a, t, c, g, other or unknown

<400> 80
 atctagatca tcgatcttgt ccaaatttta actagtgaat agttttaaaa aaaagcaact 60
 agcagaagag aacctaacca ctgacaaatt gcaaatactc tagaactacta ttcattcattt 120
 tttgcgattc acgctggacc cacaagaacc ccttgagctg aactttcttt tcgttctccc 180
 tccttttggg tagcaccatc tagaccatcg atcttgtcca aattttaact agtgaatagt 240
 tttaaaaaaa agcaactagc agaagagaac taaccactga caaattgcaa atactctaga 300
 acactattca tcattttttg cgattcacgc tggaccacaa gaactcttga gctgaatttc 360
 ttttcgtctc ctctttttg attggacatc naatcctgca gccggggatt catattctta 420
 acggcgcneg cgnggactcc atnccccata tgatcttttc atcctggcgc ntttaactct 480
 gaagggaac cggnntnccc ttatccctgg anatcccttc c 521

<210> 81
 <211> 163
 <212> DNA
 <213> Pinus taeda

<400> 81
 gtggagtgtgta aagggtcaacg tgccatccgg gtacaaacta ttgtagaaaa aatggcaaag 60
 ttaggtctga aaatatccat ttggcctgct ctagttgtac agtacatgat tttgcactcg 120
 cacaacaatg gactataatt attttcctgg caaaaaaaaaaaa aaa 163

<210> 82
 <211> 486
 <212> DNA
 <213> Pinus taeda

<220>
 <221> modified_base
 <222> (330)
 <223> a, t, c, g, other or unknown

<220>
 <221> modified_base
 <222> (349)
 <223> a, t, c, g, other or unknown

<220>
 <221> modified_base
 <222> (364)
 <223> a, t, c, g, other or unknown

<220>
 <221> modified_base
 <222> (368)
 <223> a, t, c, g, other or unknown

<220>
 <221> modified_base
 <222> (411)
 <223> a, t, c, g, other or unknown

<220>
 <221> modified_base
 <222> (431)
 <223> a, t, c, g, other or unknown

<220>
 <221> modified_base
 <222> (447)
 <223> a, t, c, g, other or unknown

<220>
 <221> modified_base
 <222> (461)
 <223> a, t, c, g, other or unknown

<220>
 <221> modified_base
 <222> (476)
 <223> a, t, c, g, other or unknown

<220>
 <221> modified_base

<222> (478)

<223> a, t, c, g, other or unknown

<220>

<221> modified_base

<222> (480)

<223> a, t, c, g, other or unknown

<400> 82

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ggtgcatcc aggacatgag gccgagtttg ccattgtgat atgattgagg aagtccagtc 60
ctaaaattag gtttatcttg atgtttgaca agagatatag aggggcatga tgattcattg 120
atctgtttgc agatctgtaa ctgcaaccat tctaatagaca taatagcgct attgtttggg 180
ttcgtgtgat gacataataa attgatttaa tttataaaca tctgttaatg caatggctgt 240
agctgcatca tcaccgtatc catcgaaatgt tccatttttc caaatgtttg tttccaaaac 300
cagaacacca aaatgtcccc tgcgtttgtn ttgaaaaata ttgggcccnt actatactat 360
aatntttngg catactatac tataatgttt ctcccattcc ccccaaatga ntcctataca 420
atcctggcgg nctttacact cctgacngga aaccgggctt nccactaatc cctggncnan 480
cccttc 486

```

<210> 83

<211> 144

<212> DNA

<213> Pinus taeda

<400> 83

```

ggtgcatcc gactgtgata tgtgactggt gaacgagaga tccttcttat gaattaatct 60
ggtatcttta tgcgaaagct tttaggggtg ctacatgctc tcctcttttg tatgaatttc 120
cattctaata tcagtctctg tgat 144

```

<210> 84

<211> 525

<212> DNA

<213> Pinus taeda

<400> 84

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ggggagtgtc aaggataag tggtaagcca ggtttccagt cagaagtgtg aaggcggcca 60
gtgatgtaat agattcatat aggggaatgg agtcaccggg gtgcgccgtt ttagaatagt 120
ggatccccgg ctgcaggatt tgatgggtgcg atcctgcccc tgataatttg gttgcaatgg 180
aaaatgcagt attaggtgcg agatgtaaaag cccgcccggg gcggtgcatg aagtactgca 240
atatttggtg tagtaaatgt gctggttggt ttcccagcgg tcactatggc aacaaggacg 300
agtgcacctg ctacagagat atgaagtccg cagccggcaa gcccagtggt ccctgatctt 360
agcacttcag tccagtcgct cacttctttt attctttttt tttataaaaag tgacgaggcc 420
gtttttcttg tacttggtgg ccatatgtag agcggtggtt acttctcctg tgtaggaaa 480
tggtgcagta ctaataataa gaacttcttt ggcaaaaaaa aaaaa 525

```

<210> 85

<211> 543

<212> DNA

<213> Pinus taeda

<400> 85

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gggtttcctt aagagttaaa ggcgcatgat gtatagaatc atatagggga tggattcccc 60
ccggggggcc tttcagaata gggattcccc gctgcaggat tgatagtgcg atccaagaca 120
cagtggagta ccacaatggg gatctggcca gtgctttgtg gctattcact gcagctgtat 180
taaacagga agccgcaaat ggccagaagg ccattgaact tgctgagagc agactatcta 240

```

```

aggatggctg gcctgaatat tatgatggga agcttggacg atatattgga aagcagtctc 300
gaaagtggca aacctggtca gttgctggat atcttgtagc caagatgatg cttgaagatc 360
catcccatctt aggtatgata gcattggaag aggacaaaaa gatgaagccg tccctcactc 420
gatcagcttc ttggataatg taaaatgggg aaatcctaaa ctttcaggcc actcttgaat 480
gttttgtcac ttctgtatga caaatgaggc aattcatagt acatgttgtg caaaaaaaaaa 540
aaa 543

```

<210> 86

<211> 370

<212> DNA

<213> Pinus taeda

<400> 86

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ggtgcgatcc cagagaatat tagttcatgt gttgctctca ttttcttcaa tatgcagggc 60
aaccatttga atgaaattat tcctttcgaa tttcaaaaac ttaataggct aacttatcta 120
tctggagccg attttcatctg acgagtaacc tgtaagctgg ccagcaaaag ccaacagatg 180
ttcagctcgt tggaaccagt tgaagattgt aatagagatg gtgaataatc gcggacggct 240
cggccaatgg aatatttggt gcacatcat caaggggggt tgaattccaa agaacttggt 300
gattgaaatt cccaagcaaa attctgtgaa atgaaaaaatt tattgagacc attggggcaaa 360
aaaaaaaaa 370

```

<210> 87

<211> 237

<212> DNA

<213> Pinus taeda

<400> 87

```

ggtgcgatcc aaagaacaca agatggagtt accacaatgg aggatcttgg ccagtgcctt 60
tgtggctatt cactgcagcc tgtattaaaa caggaaggcc gcaaatggcc agaagggcca 120
ttgaacttgc tgagagcaga ctatctaagg atggctggcc tgaatattat gatgggaagc 180
ttggacgata tattggaaag cagtctcgaa agtggcaaac ctggtcagtt gctggat 237

```

<210> 88

<211> 476

<212> DNA

<213> Pinus taeda

<220>

<221> modified_base

<222> (379)

<223> a, t, c, g, other or unknown

<220>

<221> modified_base

<222> (394)

<223> a, t, c, g, other or unknown

<220>

<221> modified_base

<222> (400)

<223> a, t, c, g, other or unknown

<220>

<221> modified_base

<222> (403)..(404)

<223> a, t, c, g, other or unknown

<220>

<221> modified_base

<222> (406)

<223> a, t, c, g, other or unknown

<220>

<221> modified_base

<222> (414)

<223> a, t, c, g, other or unknown

<220>

<221> modified_base

<222> (421)

<223> a, t, c, g, other or unknown

<220>

<221> modified_base

<222> (430)

<223> a, t, c, g, other or unknown

<220>

<221> modified_base

<222> (433)..(434)

<223> a, t, c, g, other or unknown

<220>

<221> modified_base

<222> (444)

<223> a, t, c, g, other or unknown

<220>

<221> modified_base

<222> (450)

<223> a, t, c, g, other or unknown

<220>

<221> modified_base

<222> (454)

<223> a, t, c, g, other or unknown

<220>

<221> modified_base

<222> (463)

<223> a, t, c, g, other or unknown

<220>

<221> modified_base

<222> (470)

<223> a, t, c, g, other or unknown

<220>

<221> modified_base

<222> (476)

<223> a, t, c, g, other or unknown

<400> 88
 ggtgcgatct gtgtggctct gaaacatccc ggctcccctc tgcactataa taatcccaaa 60
 attaagtga cccaacagaa tttgtcata tctctacagt tattgcagac tgagcaaaac 120
 cctcaaactc atgtgacctc tcaataggag cccacgcccc agatttgtec agcatgtaac 180
 acacctgatc gccgccactg caagcacaac cgctcacaaa tatcttgtea caccacactg 240
 ttgcgcaagt taacaatatt catgtctcca ggaaagaaat gccacacttc ccaacattct 300
 ctttactatt atagaacttc cttgttgcta tggaaaaaat acattcccaa cgcagaaccc 360
 caacgggggt tcccaatanc ccatttcccc cctntccaan ccnntntgaa tgcnccccat 420
 nccctattgn atnntttaaa tccnggcgc n ttanctggaa ggnaaccgc n ttcccn 476

<210> 89
 <211> 364
 <212> DNA
 <213> Pinus taeda

<400> 89
 gttttccag tcaggacgtg taaaacgacg gccagggatt gtaatacgat tcactatagg 60
 cgaattggag gtcgatccgt ataggtagtt ggatgatgaa cgggcaaaga aggcaaagga 120
 gtacagtgat ggatcctgta attcctgttt cagaaaacag aaaatctgca atataaggat 180
 ggctaagctt ttcagctatg aaaatatatg gtgcagtggc actcatatca gttgcagagt 240
 tgtcaatata acttttgtga ataggaaagt tgtcctcttt tagagtgcag aaatcctgca 300
 atataaggat ggctaagttt ttcagctata tgaaaatata tgggtgcagtg gcaaaaaaaaa 364
 aaaa

<210> 90
 <211> 170
 <212> DNA
 <213> Pinus taeda

<400> 90
 ggtgcgatcc tacagagagc agcttgacga gggccaaaag gttaaggatg aagaatgacc 60
 tcagctagta aggtttacag aagcagcaga ggcactctta ctgtttttat gttttggcaa 120
 aagttgttgc gtcggttgtt taatccagga tttcagatgt attttgtaga 170

<210> 91
 <211> 210
 <212> DNA
 <213> Pinus taeda

<400> 91
 attgtaatac gactcactat agggcgaaatt ggaggggtccg atcctgagag accgaggggt 60
 cattttcctt tagacaacga cgttcagtgg cgaccagagt ttcccaatca cttcagcgat 120
 tctattcctt cgttgtaata aagcttaagg aatccatgct ttattccttg gaaggtttga 180
 atatttatat ttattggcaa aaaaaaaaaa 210

<210> 92
 <211> 237
 <212> DNA
 <213> Pinus taeda

<400> 92
 aggtgaccgt caaatgatt gcagaggact tagagagga aaaccgttcc gatctggtga 60
 agcaattgga tgaagcagct ctggaattga ttcccgtttc tgatgatata gtacggctaa 120
 gctcagctct tcaggcaatt ggcagagaat acgattcttc aaatgagatg acagatttta 180

agaaacttat agatgaacat atttccaagc ttgaagcgga ttcccctacg gtcacct 237

<210> 93
 <211> 525
 <212> DNA
 <213> Pinus taeda

<400> 93
 aggtgaccgt aaaatactat gagaaatgct ttcatacaggc accgctggta ggttttcttc 60
 aagctttttca ttaggcaaaa gaggtccgt gagttgatcg ttaattctct ctttgaatgg 120
 ccatattgac cagacactct gattagaaac tgggaatacaa ctgcacatat agtcattctt 180
 atatgattca tccttctgca cttcagcacc ctgcggcaac tcttcacccc gccatactgc 240
 agaaaaatta tttgactctt gatcatgttg tagatgaatc ttcatagaatc ttctcatctt 300
 gcattcttgt ctttatactt ttaggaaatt gcactctggta aaagtataaa tgcactcttca 360
 ctgggttgcct cagtttttgc atgctcctgt tcttcttgtt tacatgtgat ctaccaaatc 420
 atctaatagt tctctctcaat gtcttgtgga cattctcctt cattccgaga ttaccaatca 480
 tctaccggaa taaatgttgc cccgtcagca atgccgtttt ggtcc 525

<210> 94
 <211> 437
 <212> DNA
 <213> Pinus taeda

<400> 94
 aggtgaccgt agtaggcgtc cagaggctga caaaatccca ggctctgtgca aatctggaag 60
 ccgcatgcag ggccgtggca cttacactt gcggccttaa caaagtggcc cgcggcacc 120
 acttctacca gtgtgtttat attcttgtgc agccaacacc agaggttatg caggcgaatg 180
 tgctggccaa gcgttgttct ggcttgtccg caaacctctc cgagtcttac atgccgcata 240
 tgagtcttgt gtatggcgat ttgcctgacg acgagaaaga gaaggccaag gtttaaggcgc 300
 agctaaattc gatgaactta tccgcaacac ggaattccaa gtctccagct tgtgcttgta 360
 ctgcacagat ctgaaaataa tctcactca tgcataagtg caaatgtga tcttaacctg 420
 ctctgaaaat tacataa 437

<210> 95
 <211> 372
 <212> DNA
 <213> Pinus taeda

<400> 95
 aggtgaccgt ccacgagaat ttggcttcaa aaccctagga gagggatatg aacttgccaa 60
 ggcacaactg acgcatgaac aagacgtaaa atgactcatt agacactgac atgataatga 120
 aaaacctatg aatgatgata gactcagcta cttgatgaca tcgcccgcga tttggacatc 180
 tttataagga gtttaagcaa accctagacc tactgcctag tgaccaactt ttgcttgacg 240
 actcactgaa atgacaatat ttgaccttga cacttcaaaa tcactttgta ggaactcatt 300
 tgatcactgg aggacggctg gaaagactga cactaacagg actttatata tgcacctcgt 360
 ctatccgaac tt 372

<210> 96
 <211> 442
 <212> DNA
 <213> Pinus taeda

<400> 96
 aggtgaccgt aagcacaagt cgtcaaaatt atctctattc cggcagtaaa aacctatagc 60

taatgatgga	tcaatagcac	taagtggcag	ctggcggtaca	tcaactgcaat	gataagaacc	120
agtatcaacc	cccatattat	caggagatat	ctcccaccacc	tgctgcacta	catgtggatc	180
taagtacaga	gcctgatcat	cctgaacacc	aacaatatac	ggtgaagctc	caggctttcc	240
accagcaata	ccaagacttt	ggggaaatgt	gaacgtttca	cgaagtgatg	gtacatacct	300
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<212> DNA

<213> Pinus taeda

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tgaaagtga	ttctatgagt	ctatacccaa	cccaaatcaa	taggttgagg	taacagttga	180
cecgatttca	ccttcaacaa	atcatacctt	tcccgaagag	agtgaacatg	attcaacaca	240
agttcttttt	ggttcaccag	attcaaata	gcttgggggg	aatcctcctg	ttccatcaag	300
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ccnanaatta tnacnnnana gcnccatgct gggtttgtna naaaanaacn gctnttgata 180
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<212> DNA

<213> Pinus taeda

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agagcctttt tattttcttct ggagagccaa ttgctagcat aatgaatacc atgttcaaga 180
agtaaagaga tgaccacaaa tgccaaacaa acaactgcta ctgcccaggt taggagtttg 240
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<212> DNA

<213> Pinus taeda

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atgagggcaa gaggggcaac gctgattcag atgacttgaa tgaaatggaa gtcaaagcta 180
aagcagccga acaactgctt gctgtgcatg gggcagcatt actacagaat gctctgaaag 240
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gaaagaacag aaagggcatc aacgcagacc cctcactgat atcggaaca ctacggtcac 360
ctaagccaat tctgcaaatc tccatcactg gcggggcccg ctccaacttc ctctaaaagg 420
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<212> DNA

<213> Pinus taeda

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 caaaaaaaaa aaaaaaa 197

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 <213> Pinus taeda

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 <212> DNA
 <213> Pinus taeda

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 atacaatcct aacatccatc tcccagacaga cctccagtat atgtacaagg cgctgaaaga 180
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 ctgttcccc 430

<210> 106
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 <212> DNA
 <213> Pinus taeda

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ccttgtcttg gttttgtctt ccgtgccttg tccatttgga gagtcttcac agcttctgce 300
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<212> DNA

<213> Pinus taeda

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tccggagctc catgttatcc ccggcactga gacagtcgct gccgaatcgc aagagcttct 300
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<211> 578

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tcaacagtgc tgcaacaatg ggcataacgt ctcccgaatt aattgaaact attgtgaatc 180
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aataaactga atctcgacct tagcactatt gccaccatca tctcaagcaa acattctcta 360
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 cggagatatt taaaaaaaaa gaattgtcat tatggtaaat aggtgtgaca gggtatcaat 180
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gact	acntga	gtanaagcga	tcattatcct	gcnaactttg	catgaaaaac	aacaaaccca	240	
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<212> DNA

<213> Pinus taeda

<400> 115

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tcttc	ccttgg	ttagagaccg	tcaccttcac	tttgaattgg	ataaagcttc	atttgtttaa	360	
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<400> 116

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agg	aatggg	gttagggacc	attaagtagt	attatcgatg	gatgcattgt	tgtatctatt	240	
gtact	cccta	tgctagaatg	aactccattg	atctgggatc	aatgaatact	gtttctggga	300	
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 gagaanccat aacatctcct tgagcnacac atgggatata ccgccanctt atntaatact 180
 ttcncngcac ggtaacngac canaancatt cttcactata gaattcatgt cgettcatta 240
 tctacctcat tncnccanat ccccttnnat ctcatnnatt tatctagaaa nttctgaagn 300
 tccnnaaggg ttcgttttgc accnccccaa ntaaaaaanc cctnccgntt acntcgaacg 360
 aagggttttca aangaacagn aattccttta caaaaatcaa naattttaac ttcccnnaatc 420
 cggccccccn gtncccgaag cccnattttt acgattgcat caccgccggg gncnctcaa 480
 ncenncttct taaaggncca tncctntnnn tgatcctctn ccattccaang gnccttttcc 540
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 <213> Pinus taeda

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 cggagatatt taaaaaaaaa gaattgtcat tatggtaa at aggtgtgaca gggttatcaat 180
 agaataactg acgagagtaa actgataatt attaaaggta aagtgttcgt aaagganact 240
 tggactctag gttggatgcc tacacttaga gcccggtccc gcacttggaac ggtcacct 298

<210> 119
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 <212> DNA
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 <222> (609)
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 ttgatggcaa tacagtaaac cttggcttgt gggacactgc agggcaagaa gattacaaca 180
 gactgaggcc attgagttat agagggtgcag atgcttttct gcttgccctt tctctgatca 240
 gcaaggctag ttatgaaaat atatcaaaga agtggattcc agaacttaga cattatgcac 300
 caaatgtgcc aatcattctt gtgggaacta aattagattt gcgtgatgac aagcagttct 360
 ttgctgatca tcctggagca gccctataa caacagctca aggtgaagag ttgaagaagc 420
 agattggagc agcagcatat attgagtgca gttccaaaac ccagcagaat gtcaaggctg 480
 tttttgatgc tgcaattaaa gtggttcttc agccaccaa gcagaaaaag cggagaaaaa 540
 agcagaaaaa ttgttctatt ctctaagaaa aatgtggatg ttctgaacgc ncttactga 600
 caataangnt gacgtnggaa tatcttctc c 631

<210> 120
 <211> 443
 <212> DNA
 <213> Pinus taeda

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 taatgatgga tcaataccac taagtggcag ctggcgtaga tctctgcaat gataagaacc 120
 agtatcagtc cccatataat caggagatat ctccagcacc tgctgcacta catgtggatc 180
 ttagtacaga gcctgatcat cctgaacacc aacaatatac gttgaagctc cgggctttcc 240
 accagcaata ccaagacttt ggggaaatgt gaacgtttca cgaagtgatg gtacatacct 300
 tgggttgatc ttctctacac caagaacaag cggcaccaa atcaggatag gcacttggtc 360
 ttcccttct ccattggacc actctgaaca caagcctcgc agcatcatca atgcagataa 420
 ctgggcgccc tccacggtca ctt 443

<210> 121
 <211> 327
 <212> DNA
 <213> Pinus taeda

<400> 121
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 ttgctactcc cctgacgttg tctggatatt tctcttcaag ctcttcaagc tgcttctcca 180
 agtacttttt accggtgcct aggataatta actgcacggt ttcatctgca attagaggga 240

cagcttcagc aagaatatct ggacctttct gctcttcaag tcttccaata aatcctataa 300
caggaatatac tggatccacg gtcacct 327

<210> 122
<211> 284
<212> DNA
<213> Pinus taeda

<400> 122
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ggcctcaagt cgccctgaat ttggtcaaca acatcttgat agagcgagag gacgctccca 120
attaagatct ggaaactgtc gagagtgatt gaggtcattt ttaatctaaa ctgaattgtg 180
gggacaattt ttcaattcag atccttctag caaagcaaag caaagcttaa cagtattgta 240
tccatgagaa tggattctgc acaggtcagg ctccacgggc acct 284

<210> 123
<211> 412
<212> DNA
<213> Pinus taeda

<400> 123
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cgctcgtggga ggacagagct ccgggaaatc ctctgtgctg gagagcatcg ttggaagggga 120
ttttttaccg cgtggatcag gtattgttac tagacggccg cttgtccttc aacttcacaa 180
gactgatgaa ggcagcaggg attacgccga attccttcac caaccagaa agaaatacac 240
cgactttgca ctggtaagga aggaaattgc ggatgagact gatcgaatta cagggcggtc 300
caagcaagtc tcaagtgtcc caattcacct tagtatttat tcaoccaatg tttgtaaatt 360
tgactctaatt tgatctccct gggttgacaa aagtggctat tgacgggtcac ct 412

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<211> 235
<212> DNA
<213> Pinus taeda

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agtaggtgag ctgctgcaga cagtggggca gccctcgtgg gcttggactg cctgtcatac 180
tgttctctcc ttgcttcagg ctctactgct gttgctgctg ctgatacggg cacct 235

<210> 125
<211> 353
<212> DNA
<213> Pinus taeda

<400> 125
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tgcaggcttc ttgctgcctg agacaggagc ctcaagaaat cttccccct tttcaatgat 120
tgcctcattg atctttgttg aagtgatagt atcaactgtt gacatgtcaa tgtatccttt 180
tcctgtacac atttgctcta ggacaccatc cgagagggca gcaggaggat cagacaggat 240
ggctatggta tagttgact tctttacaac ttcggcagga gtgcttccta tgggaagcacc 300
ttgctgaaca agttcttcac acctagacat tgtcctatc cacacgggtca cct 353

<210> 126
 <211> 355
 <212> DNA
 <213> Pinus taeda

<400> 126
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 gcaggcttct ggctgcctga gacaggagcc tcatgaaatc ttccccctt ttcaatgatt 120
 gcctcattga tctttgttga aatgataata tcaactgttg acatgtcaat gtatcctttg 180
 tctgtacac. atttgctcta ggacaccatc cgagagggca gcaggaggat cagacaggat 240
 ggctatggta tagtcgcact tctttacaac ttcggcagga gtgcttccta tggaagcacc 300
 ttgctgaaca aagttcttca cacctagaca tttgtcctat tccgcacggt cacct 355

<210> 127
 <211> 441
 <212> DNA
 <213> Pinus taeda

<400> 127
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 gtgggtccaat ggagaagggg aagaccaagt gcctatcctg attttggtgc cgcttggtct 120
 tgggtgtagag aagatcaacc caaggtatgt accatcactt cgtgaaacgt tcacatttcc 180
 ccaaagtctt ggtattgctg gtggaaagcc tggagcttca acgtatattg ttgggtgttca 240
 ggatgatcag gctctgtact tagatccaca tgtagtgcag caggtgggtg agatatctcc 300
 tgataaatatg ggggttgata ctgggttctta tcattgcagt gatgttcgcc actgccactt 360
 aatgctattg atccatcatt agctataggt ttttactgcc cggaatagaa ataattttga 420
 caacttgtgc ttacggcacc t 441

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 <211> 437
 <212> DNA
 <213> Pinus taeda

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 gtgggtccaat ggagaagggg aagaccaagt gcctatcctg attttggtgc cgcttggtct 120
 tgggtgtagag aagatcaacc caaggtatgt accatcactt cgtgaaacgt tcacatttcc 180
 ccaaagtctt ggtattgctg gtggaaagcc tggagcttca acgtatattg ttgggtgttca 240
 ggatgatcag gctctgtact tagatccaca tgtagtgcag caggtgggtg agatatctcc 300
 tgataaatatg ggggttgata ctgggttctta tcattgcagt gatgtaccca ctgccactta 360
 gtgctattga tccatcatta gctataggtt ttactgccgg aatagaaaaa ttttgacaac 420
 ttgtgcttac ggtccct 437

<210> 129
 <211> 434
 <212> DNA
 <213> Pinus taeda

<400> 129
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 gcttggcagg atattataga agattcatca aagatttcat taagctagcc tcgccattgt 180
 ctagcctctt agggaaagat gttgagtttc aatggactga tgactgccaa ggggctcttg 240
 atgagttgag agataagctg gtatccgccc cgatcttgag aggtctaaac tgggccctac 300
 ctttccacat ccacattgat gcctcgaaca aagccatagg ggcagcctta ggacaagttg 360

aagagaaaat accatatgcc atatactttg tcagcaaaaa tctgtctaag gcagaactga 420
actatacggt cact 434

<210> 130

<211> 427

<212> DNA

<213> Pinus taeda

<400> 130

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aaaatcaaca cacggtaaat gtcttgagac taacgagaaa ttaataatca cggtgtacaa 120
agaacagtat gtcccggtcac gtcacgagtg ccctgagaga tcatccaact ttctctgaac 180
cctcgtgtta cacgcacgca aaatcaagga tcagttgtag ttattgctgg cgtagacagac 240
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tgatcttagc gcagtggtta tgaaattatg atgaatttgc ttatgatttt ctccagcgtt 360
gtggaagaat ctcgctattg aaaacttccc cgtatatattc caaacttatt atcatccac 420
ggtcctt 427

<210> 131

<211> 261

<212> DNA

<213> Pinus taeda

<400> 131

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aaacgagata agttgtaaaa ttttgctcgc tgatttttgc ctgaatattt ctctcactat 180
aaaaagcatt ttccagaaat aagaaggagc tttcgaactg gttttcccca agagttgtag 240
ggggtttttc cacgggtcacc t 261

<210> 132

<211> 262

<212> DNA

<213> Pinus taeda

<400> 132

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cttttaggtag aaggcgagga gggctttatt agtacagttc tgtgtaatct taatgatatt 120
ttttgacta ttattttatg gtaaaaggat tgatttgcct tttgcaaagg ccttaggatt 180
gtttatttac ctttgggcta agggaggagg taaatttttc acattgggaa aaaaaatgcc 240
tcggtcggtg tcacgggtcac ct 262

<210> 133

<211> 126

<212> DNA

<213> Pinus taeda

<400> 133

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tcacct 126

<210> 134

<211> 238
 <212> DNA
 <213> Pinus taeda

<400> 134
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 ttgggtgtgt tgtacttggt cttatcttgg ttaatcaggc ggatccttgc cctgtaateg 120
 gtcttcccct ctctcctgcg cttgaatttg acctgaaacc tcttgaagta ggccctgggt 180
 ttctgggctt tgacgaaaac catgggttggt gatctcctct ctctgctac ggtcacct 238

<210> 135
 <211> 245
 <212> DNA
 <213> Pinus taeda

<400> 135
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 agatgaacga tcaaataagg ttcaaaagct ggaaaatgat ggtgaattcc atgcatccca 180
 cttggctctg tccctcaagt tgaatatacc tggacgagag gtattgcatt tcccaacggg 240
 cacct 245

<210> 136
 <211> 239
 <212> DNA
 <213> Pinus taeda

<400> 136
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 taatcttcca tggcagactc ggggggttta tctttaagtt gaatttccat gcatccccct 180
 gggctctgtc ctccagttga atatcctgga acaagagggt ttgctttcca cgggtccct 239

<210> 137
 <211> 276
 <212> DNA
 <213> Pinus taeda

<400> 137
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 atgtgaaaac tgaattgcta tatatgatgc ctagtcttgg cctctcaatt acaagttcaa 120
 cgtcttcaaa tgattgaaat atggaccttc ttaaccgttc tggaaatcta tcaatcttca 180
 aaattttgaa actttgcttc gatcttggag tgatcagact tgatttctaa tcctagaaat 240
 accctatcac tggctacctg gtctgtacgg tcacct 276

<210> 138
 <211> 274
 <212> DNA
 <213> Pinus taeda

<400> 138
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 gacagtgggg gagaaagtag tgaacaagga catggctcgt atgaaatata tggcaggcga 120
 tggatttcaa gggattaagc atctcaatgg atatttacta ttggactgta gtaactttcg 180

ccatcgcttt ttgaacacat ctgtggctta actgtcatct gtaatggtaa gcgaaccagg 240
 ttttgttctg aaccacttgt atgtacggtc acct 274

<210> 139
 <211> 526
 <212> DNA
 <213> Pinus taeda

<400> 139
 aggtgaccgt ggtggagcga ttagtgattg tgataaaggg agcatcaata tctatgtaga 60
 cgccgtataa aggtggaaaa ggtatgtttt gcaggatattt ctttgtaaat gggtttataat 120
 ggggttaagct cggatatatg aggtttatat ataagtcctg ttagtgtcag tcttaccagc 180
 cttcctccag tgatcaaagt tgctctaaca aagtgtttt gaagtgtcaa ggtcaaatta 240
 tgtcatttca gtgagtcctc aaacaaaatt tggtcactag gcattaggtc taagggtttg 300
 cttgaactcc ctctagagtt gtccaaatgg gcgggctatg tcatcattta agctgaatct 360
 atcatccaat caataagggt tttcattatc atgtcagtg cttaatgagt cattttaccg 420
 tcttgttcac ggcttcactt gtgcctttgg caaatccaat tccctcctcc aagggtttga 480
 aaccaattct cttggacggc ccctaaacca aatctgcaaa atccac 526

<210> 140
 <211> 538
 <212> DNA
 <213> Pinus taeda

<400> 140
 aggtgaccgt ggtggagcga ttagtgattg tgataaaggg agcatcaata tctatgtaga 60
 cgccgtataa aggtggaaaa ggtatgtttt gcaggatattt ctttgtaaat gggtttataat 120
 ggggttaagct cggatatatg aggtttatat ataagtcctg ttagtgtcag tcttccagc 180
 cttcctccag tgatcaaagt tgctcttaca aagtgtttt gaagtgtcaa ggtcaaattt 240
 tgtcatttca gtgagtcctc aagcaaaatt tggtcactag gcattaggtc taagggtttg 300
 ttttaactcct tctaaaagtt gtccaaatgg cgggctatgt catcatttag ctgagttctat 360
 catcatcata gggttttcatt atcatgtcag tgtctaataga gtcatttacg tcttgttcag 420
 ctcatgtgc ctggcaattc attcctctct aagggtttgaa ccattctctt gacggcacta 480
 agccaatcca cactggggcc gtctattgaa tcaaccggga cactgggtta caggcaac 538

<210> 141
 <211> 498
 <212> DNA
 <213> Pinus taeda

<400> 141
 aggtgaccgt ccaagaagaa attggcttca aaaccctagg agagggaat gaacttgcca 60
 aggcacaact gaagcatgaa caagacgtaa aatgactcat tagacactga catgataatg 120
 aaaaacctat gaatgatgat agactcagct aaatgatgac atagcccgcc atttggacaa 180
 attttagaag gagttaaac aaaccttaga cttaatgctt agtgaccaa ttttgtttga 240
 agactcactg aatgacaaa atttgacctt gacacttcaa aatcactttg taagagcaca 300
 tttgatcact ggaggaaggc tggaaagact gacactaaca ggacttatat ataaacctca 360
 tatatccgag cttaaccat tataaaccat ttacaaagaa atacctgcaa aacatacctt 420
 ttccaccttt atacggcgtc tacatagata ttgatgctcc ctttatcaca atcactaatc 480
 gctccaccac ggtcacct 498

<210> 142
 <211> 350
 <212> DNA

<213> Pinus taeda

<400> 142

```

agggtgaccgt gatagacccc aagaaaaata gatccaaccc tcagagggac aaagacttat 60
aaagactaga agagtgaatc aacctattct atttagaata tatatttttg ggggtgcttgc 120
ttatcgtttt ggggggtaat gtatgtcgta ctacggctct atgccctaata ttgcccattg 180
aaatcaacta aattgacagt aaccgactaa aagttggctc acactaagat atcgatgacc 240
aacgatcata aagggtgtcca tgatcctaata agtatatgtg tcaattaatg taactttggg 300
gctacaacat aaaaccattc gtgggggatcc tcctttttat gcggtcacct 350

```

<210> 143

<211> 346

<212> DNA

<213> Pinus taeda

<400> 143

```

agggtgaccgt gggaccgacc ttgactacag gccaaaattt tgactgttga ccagcgttca 60
cttctgtatt tttggttggt atgagcaaca ttgacttgct ggaaattgac cagggtttgac 120
tggtattttg acttggaatt tggcacagat ttctagacaa tttgtatttg taaaccttac 180
agaagaataa tttatcgaag aagaaaaatg ctaggtttcc cctcaagttt ggggtttcca 240
agggaaaaat tgttggtcca atggttgaat tttccaaagg tctcctaacc cgacaatacc 300
tcctaagaat tccttaattt aacctttctt gttttcacgg tcacct 346

```

<210> 144

<211> 335

<212> DNA

<213> Pinus taeda

<400> 144

```

agggtgaccgt gaaggagcag caacaatttg attttgtttg ggtagatcgg ggattttctc 60
gtggaacata cctgattgag tataaactaa gtcaaggtag tgtgcttgag aaattacttg 120
ctcctcagta actactctgg ccttagctac atcctcagtg atcttgggta gtaaagattt 180
tacaaacat tcagctaaga tctgatccgg gatataaact ttcactaaac gtcgtcgacg 240
tctccattca tggatatgat ctgaaatgta agtggacgtt gactgcttta acgaagttaa 300
taattctgtg ccattttcat atctgacggg cacct 335

```

<210> 145

<211> 344

<212> DNA

<213> Pinus taeda

<400> 145

```

agggtgaccgt acctaattgg aagacacttc aaggtaaaaa caaatcatga tagtcttaaa 60
taccttttag aacaaagatt atattcagaa caacttgctg gaagtgtacc aagtatgact 120
ggatttgaga cttagatctt cgcacagatt tcaagacaat ttgttggtgt aagactcact 180
cacgaaaagt gatgtggata tgaagaactt ccctgtcgcc tcttggttag gagtctocca 240
ctcataggaa ttgtgtaact tataacttgg tccactaaag aagttaggta cagtgtgttc 300
ctttaccagg ttccctgttg taacttacia atctacggct acct 344

```

<210> 146

<211> 288

<212> DNA

<213> Pinus taeda

<400> 146

```

agggtgaccgt cactggaggt ttgagatgct tgatcggtag tgaaatgaga catgatcaga 60
ataggacctt gttgagggcg tgtctcacc cccatccaca atcttttgta attttgagtt 120
tcgttttagaa catacttgta ggataaaact taccttactc atggatcatg gctgtatatg 180
tttatcgacc agagacagat atgccgaatg aaagcgagtc tagtattcta atgcaatata 240
ttggtagtagt gggacatagt actgaacact tgtatagtag ggtcacct 288

```

<210> 147

<211> 288

<212> DNA

<213> Pinus taeda

<400> 147

```

agggtgaccgt ggtctcagtt atgccatagt tccgcccctc catatgatgc tccgcctcta 60
tggggggtctt tgcatgttg atatctagta gtacttcttg tcctattgca gcaacctgta 120
ctgggtgttg tggttggtat ggggtctcta cgcgatggag atatgagaca cccatagggtc 180
gaacagggtct aatatctgga atccaacgct atttggtgta gaagaaacgt tgctcccgtc 240
ctttagcttt ggctgggtcac tatecttagc ctccacgtac ggtcacct 288

```

<210> 148

<211> 208

<212> DNA

<213> Pinus taeda

<400> 148

```

agggtgaccgt tgggaaatgc aatacctctc gtccaggtag attcaacttg agggacagag 60
ccaagtggga tgcattggaat tcacttaaag ataaaacccc cgagtctgcc atggaagatt 120
acatcactaa ggtaaacag ctacaagaag tagcatgatg ccattgatct ccctttccct 180
gcctcttcta ttatcagtag ggtcacct 208

```

<210> 149

<211> 197

<212> DNA

<213> Pinus taeda

<400> 149

```

agggtgaccgt caaggcaaag tgtcatgcca ctcatggaa ttagttaata tagctaattt 60
gagatattac agtcaactgt gggatatagt atgtgagatc aagggtgcagt ttagatatta 120
tcagtgggtgc agtttagata ttatcagtag ttgtgaatct gcatactgct tttggttggt 180
tctaactacg gtcacct 197

```

<210> 150

<211> 527

<212> DNA

<213> Pinus taeda

<400> 150

```

agggtgaccgt agacatatat catggaaaac ccaagtaaca tacaaacaca aaacacatgg 60
aaacttcata aaacctccac tcgtcataag ctttattgct atgttattgt ggtgttgcat 120
cgtacttagt ggagggttatt gttatgttat gtgttctatt ttctcccgga acgcccttcg 180
gaattgagct aaccgtgggtt aacaacatgt gggctttttt tctcgacagt atatatataa 240
taaactctta tttttttaa aactaatgct attgcattta tatactggaa aaaatgattt 300
ttcttgatt atcgaaaata ataatttagt ttcttgataa tcaactggaa ttaagaaatt 360
acaaacccta acaacatcaa gaaattttta aacacataag ctagaaattt taaaacacat 420

```

aagcgtgaca acaagaagat caaatctaata acttgcttgg gccggagatt atggattcat 480
 gaagcgattt gacagcgtcc attgatcttc ctctcccacg gtcacct 527

<210> 151
 <211> 171
 <212> DNA
 <213> Pinus taeda

<400> 151
 gggggtaggg gtgtttatatac tgagcatact tcgaaagtgg ttcaccacca ccatgatgac 60
 taattgttcc tgacttttggg agacctataa taaattccat agaaacctcc gtccatattg 120
 atgccggaat gggcaacggg tgtaatgtgc ctggtacttt gacggtcacc t 171

<210> 152
 <211> 412
 <212> DNA
 <213> Pinus taeda

<400> 152
 aggtgaccgt tgggaaatgc aatacctctc gtccaggtat attcaacttg agggacagag 60
 ccaagtggga tgcattggaat tcacttaaaag ataaaacccc cgagtctgcc atggaagatt 120
 acatcactaa ggttaaacag ctacaagaag tagcatgatg cctagacaaa tagctttgct 180
 caacacatcc tgatagtgtg cactaaatcg cacaacttta ctactacaaa gaaagatcgt 240
 tgacaccttg acaaatactt ttgctcaaca catcccaaca atttggttg cgaataccga 300
 ctccaatttg tacttgatcc atatgtcgtt gcgatgtact agttcctcta tacatatgtt 360
 tctgcaagaa tcggagttgg acctcttctt coctgttatc agcacggtca ct 412

<210> 153
 <211> 409
 <212> DNA
 <213> Pinus taeda

<220>
 <221> modified_base
 <222> (307)
 <223> a, t, c, g, other or unknown

<400> 153
 aggtgaccgt ggataagaga acgcttttgc gactctctgg gatgcccttc cctccatagc 60
 cgctcgtggga ggacagagct ccgggaaatc ctctgtgctg gagagcatcg ttggaaggga 120
 ttttttaccg cgtggatcag gtattgttac tagacggccg cttgtccttc aacttcacaa 180
 gactgatgaa ggcagcaggg attacgccga attccttcac caaccagaa agacatacac 240
 cgactttgca ctggttaagga acgaaattgc ggatgagact gatcgaatta catggcgtgc 300
 caagcanagt ctcaagtgtc ccaattcacc ttaatatatta ttcacccaat gttgttaatt 360
 tgactctaata tgatctcctg ggttgacaaa attgctattg acggtcact 409

<210> 154
 <211> 241
 <212> DNA
 <213> Pinus taeda

<400> 154
 aggtgaccgt tgggaaatgc aatacctctc gtccaggtat attcaacttg agggacagag 60
 ccaagtggga tgcattggaat tcacttaaaag ataaaacccc cgagtctgcc atggaagatt 120

acatcactaa ggttaaacag ctacaagaag tagcatgatg ccattgatct ccctttccct 180
gcctcttcta ttatcattga tctctcttct cctgcctctt ctattatcag tacggtcacc 240
t 241

<210> 155
<211> 289
<212> DNA
<213> Pinus taeda

<400> 155
agggtgaccgt acatacaagt gctcagtaca atgtcatata ctaccaatac atttgattag 60
aatacgagac tcgctttcat tcggcatatc tgtctctgga tgataaacat ataaagcctt 120
gatccatgag taaggtaagt ttgaagctac aagtattttc taaacgaagt tcaaaattac 180
ataagattgt ggctggggcg tgagaaacgg cctcaacaat gtctgttct gatcatgtat 240
catttcagta ccgatcatgc ctatcatacc cgctgggtga cggtcacct 289

<210> 156
<211> 209
<212> DNA
<213> Pinus taeda

<400> 156
agggtgaccgt actgataata gaagaggcag ggaaagggag atcaatggca tcatgctact 60
tctttagct gtttaacctt agtgatgtaa tcttccatgg cagactcggg ggttttatct 120
ttaagtgaat tgccatgcat ccactttggc tctgtccctc aagttgaata tacctggacg 180
agaggattg catttcccaa cggtcacct 209

<210> 157
<211> 191
<212> DNA
<213> Pinus taeda

<400> 157
agggtgaccgt atagtgtcaa gcttttcttg attggataat ggacggcggc ttgcgacata 60
catctacaca ttctgtaaca agtacactct actgcaacag cagacccaat ttcacctctt 120
cagtcagcca gagatctcga tggatttggg ttgaggaggt tggggttctg cctgcttcgg 180
cacggtcacc t 191

<210> 158
<211> 415
<212> DNA
<213> Pinus taeda

<400> 158
agggtgaccgt gctaagtaat tatcatctgt acctgtgctt gctgcaggaa gtaaaccaac 60
ccgactagtc tttttaataa tacagggagc cttgccacca atttcctctt gaagcaccca 120
tattggacgg gtttgtgtca tcctctgtat taccctttt catcccaagc aggctgtctg 180
ttttttagt agaaggatca caacacagat caggccctcc atagtacaaa gaagaaccga 240
ggaaagtatc attaacgttc tgactcctgc catgaaggct tccactatga ccttgaccct 300
tttgtgaatt actgccattt agaccttgac tggctcttgc aaccaaagtc ccagaatgg 360
aacttctttg tgctccagtt ccattgtggt tagttgaatc cctaccacgg tcaact 415

<210> 159

<211> 414
 <212> DNA
 <213> Pinus taeda

<400> 159
 aggtgaccgt gcaatattgt attccaggac caagtactta ggacagaatc aggtcacgag 60
 tggctccact ccacaatacg atgttcacg ttttaatcac aatacaagt tgtagtcca 120
 agtaagtgcg ctgctgcaga cagtggggca cccccgtgg gctttgactg cctgtcatac 180
 tgttccctcc ttgctcctgc tcttgctctc gctgggctgt ggtgagttac taacctgggt 240
 cgaccacaaa gggcttctca ctagggcggt aggctgcatg gatctgccag atattgtggt 300
 tgcaaggagc agaggcatga gacacaggcc tttgctttgc agaaactgca ttgctgacct 360
 catgttttca tccatcagtt ttgctacctc tccttctgtt atggacggtc acct 414

<210> 160
 <211> 225
 <212> DNA
 <213> Pinus taeda

<400> 160
 aggtgaccgt atccgcagca gcaacagcag tagagcctga agcaggggac ctaattacag 60
 tcaaaagtcc agggctacca atgcctgcta acagcgact tacttgact aacaaacttg 120
 tattgtgatt aagacgatga acatcgtatt gtggagtggg agccactcgt gacctgattc 180
 tgtcataagt acttggtcct ggaatacaat attgcacggg cacct 225

<210> 161
 <211> 234
 <212> DNA
 <213> Pinus taeda

<400> 161
 aggtgaccgt atccgcagca gcaacagcag tagagcctga agcaggggac ctaattacag 60
 tcaaaagtcc agggctacca atgcctgcta acagcgact tacttggaac taacaaaatt 120
 tttattgtta attaaaaacg aataacatcg tttttgtggg agtggaaacca ctctgaact 180
 gaatcctgtc ctaagttctg ggtcctggga ataacatatt gcacgggtca cctt 234

<210> 162
 <211> 548
 <212> DNA
 <213> Pinus taeda

<400> 162
 aggtgaccgt tacagctagg gaagacttta aaagtttgta aaactaagca tagctcttaa 60
 aactgaagt taaaagacat gattggaatg tgcaagtggg tcagtatcca aatattgaag 120
 gttgcagaat atggagctac tgtgcaaacg agtaacttta tctatatttt cacaagatca 180
 tacaatggga aacgttgaga taacaactgc atcgggtgaac cagaatagtt ataaaagttc 240
 ttgcaagtaa agggatgaat aattgcatgg ttggaattaa gaatgacct gtagagctgc 300
 tatacagatt ctccaagggt ttatatttga ggagtgcgcg ctattgatgt tgtgcaaaaa 360
 tttcagaaat taagttctgc ggcatttate aaggttgttt gagccattta aatagcaagt 420
 ttttgtttct ccaagtactt tcaggaaagc agatagctct agttataatg ctccagtgc 480
 aaacacatct agttggggca gtgaatgacg cttttgtcat tctcttttgg tttcaggcac 540
 ggtcacct 548

<210> 163
 <211> 176

<212> DNA

<213> Pinus taeda

<400> 163

```

aggtgaccgt ggacaaactc tagaacaggc atagctttca tgttcagttg tttttaaaga 60
gcagtcctcg cagcagatcg tgcagcttcc tgccttactt ccgttgattt tcctgatctg 120
aaataccgct aaacttgctg aagaacccaa atacttaata gcgtctctaa acaaaa 176

```

<210> 164

<211> 699

<212> DNA

<213> Pinus taeda

<400> 164

```

aggtgaccgt gcctgaaacc aaaagagaat gacaaaagcg tcattcactg cccaactaa 60
tgtgtttgtc actggagcat tataactaga gctatctaca agccaaaaca gtgtttggga 120
gagattccat aacgtcattg cctctgctac acatcattca ttggttccaa taatgaagcc 180
acgtgctaag gacattgaga gaatcttata aaacaagaaa tatagtaaata tgggaaatgc 240
attttatcgt ctaacctgct ttcctgaaag tacttggaaga aacaaaaact tgctattaaa 300
tggtccaac aaccttgata aatgccgcag aacttaattt ctgaaatttt tgcaaacatc 360
aatagcgcgc actcttcaaa tataaaacct tggagaagtc tgtatagcag ctacatgggt 420
cattcttaat tcacaccatg caattattca tccctttact tgcaagaact ttataactat 480
tctggttcac cgatgcagtt gttatctcaa cgtttcccat tgtatgatct ttgaaaatat 540
agataaagtt actcgtttgc acagtagctc catattctgc aaccttcaat tttggatact 600
gaaccacttg cacattccaa tcatgtcttt taacttcagt gtttaagagt atgcttagtt 660
ttacaaaactt ttaaagtctt ccctagctgt aacggtcac 699

```

<210> 165

<211> 620

<212> DNA

<213> Pinus taeda

<400> 165

```

aggtgaccgt aaaataccat gagaaatgct ttcctcaggc accgctggta ggttttctta 60
agcttttcat taggcaaaaag aggtcccggt agttgatcgt taattctctc cttgaatgcc 120
atattgacca gacactctga tttagaaact gaatacaact gcacatatag tcattctata 180
tgattcatcc ttctgcactt cagcatcctg cggcaactct tcatcccgcc atactgagaa 240
aaattatttg actcttgatc atgtgtagat gaatcttcat gaatcttctc atcttcattc 300
ttgtctttat atcttttagga agtgcactct gtaaaagtat aaatgcatct tcacgggtgc 360
ttcagttttt gcatgctccc ggttcttctt gtttagcatg tggatctagc aaatcactaa 420
atgtagttct ctcaattgggt ctggtggaaa ttctcctcaa ttcgagaatt acgaatcatc 480
atacctgagt aatatatgtt gccctgtaca tgcatatgct ggtttttggc tccaccattc 540
tccaaagggc tcaaaaaacta tgcgaccctt ggttgccgta gtggaagggt atacattgag 600
ttcccagtag ccacggtcac 620

```

<210> 166

<211> 439

<212> DNA

<213> Pinus taeda

<400> 166

```

aggtgaccgt ggagggggtc cacttatatg catagatgat gctgcgaggc tgtgttcac 60
tggtccaatg gagaagggga agaccaagtg cctatcctga ttttggtgcc gcttggtctg 120
gtgtacagaa tatcaacca gggtatgtac catcacttcg tgagacgttc acatttcccc 180
acttcttggt ggagctgggt gaaagcctgg aacttcatca atctatcggt ggtgtgagga 240

```

```

tgatcaggct ctgtacttat atccacatgt agtgcagcag gtggtggaga tgtctctgat 300
aagttggggg ttgatactgg ttcgtatcat ttgcagtgat gttccccgcg tgcctttaat 360
tgctattgat ccatcattaa ctatagggtt ttactcgccc ggaataagac aatcttttga 420
cacttggtgc ttgggtcac                                     439

```

<210> 167
 <211> 289
 <212> DNA
 <213> Pinus taeda

```

<400> 167
aggtgaccgt ggcgcctgac ctgtgcagaa tccattctca tggatacaat actgttaagt 60
ttgcttttgc ttgcttgaag gatctgaatt gaaaaattgt cccacaatt ctgtttcggt 120
aaaaatgacc tcaatcactc tcgacagttt ccagatcttg attgggagcg tctctctctc 180
tctcaagatg ttgttgacca aattcagggc gacttggtggc cagaaatcgt acattctgcc 240
atctacctgt tattgagctc cccgatttat atgcgctttt gacggtcac                 289

```

<210> 168
 <211> 314
 <212> DNA
 <213> Pinus taeda

```

<400> 168
aggtgaccgt caataccatt aaactgggga ttcgtctcaa caagtcaaca tgctaacctc 60
acagctccaa tcaaacacag tcogtcgaag ggcgctcaca ctcatccaaa ttacttcctt 120
ctgcaagact cacaaaatca gattcttcat gaattgctca aacgaggctg ttatggatga 180
tgcagctgat tactcaagtg acagcactct gaatccccgt cccatatata gcgacgcggc 240
gtttcagccg tgactggctg caacagcctc agtgggacaa aaggccagaa gccccccaag 300
gttctcacgg tcag                                     314

```

<210> 169
 <211> 242
 <212> DNA
 <213> Pinus taeda

```

<400> 169
aggtgaccgt gtcgatgttg ttagatgtga ttagggtttt atttcttgat acagatgcac 60
tgttctctcg tttattcttt tatttcttca atgtatgttg tcaaattata cttagtcaga 120
tctcctttta tcgttcgtca aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa aagtttaaca 180
attaaaaggg gaaattaggg catatcagct tgctgtatgg acccacatgc actgtaggtc 240
ac                                     242

```

<210> 170
 <211> 195
 <212> DNA
 <213> Pinus taeda

```

<400> 170
aggtgaccgt atgcagagtc aaggtttagt tccttcagag cctgccccgag tagcactgag 60
gcagctcaag ccatttcacg taggaagccc acaacaaaat agaaatcaga gtgagtcctt 120
gatcgagtaa ccataagtt cttagctccc gttccatctt aacataagca tttttcttcg 180
tcttctcgca gccgt                                     195

```

<210> 171
 <211> 217
 <212> DNA
 <213> Pinus taeda

<400> 171
 attgcagagg acttagagag ggaaaaccgt tccgatctgg tgaagcaatt ggatgaagcg 60
 ctctggaatt gattcccgtt tctgatgata tcgtacggct aagctcagct cttcaggcat 120
 tggcagacaa tacgattcct caaatgagat gacagatttt aagaaactta taggatgaca 180
 tatttcctag cttgaagcgg attcccccta cggtcac 217

<210> 172
 <211> 381
 <212> DNA
 <213> Pinus taeda

<400> 172
 aggtgaccgt ccgataaagg atgagaatat aggtagatca acccaaaaac actctcagaa 60
 aacgattaaa gcctaacccc aagatcgttg agtaaattta acccggtaac ctccacataa 120
 aatatactta gcaacaataa actcaacaac taaactatcc ctttaaaatt aaattatcct 180
 tattttattha aaaaaaataa tcctttatat actaagggtcc cctgcacatc tattactaag 240
 gtaaaggaag ggaatttat gctatcattg taaactttga cttccgtatt tatgatcaga 300
 ccattgagttt gataattaat ttacgctct ttactcccca ttcaaggcac gtgcctggtg 360
 atatatgaac gccaaattat t 381

<210> 173
 <211> 498
 <212> DNA
 <213> Pinus taeda

<400> 173
 aggtgaccgt agaatacaat ctatgtatca aaatgctaac aaagagaatt tgttgtctag 60
 cttgtaaata tacaaaagaa actctcaciaa ggagtgaagaa gcactaaggc ccttggaaag 120
 aatacgtttc tattcagcgg agtgatattt gagctacggc ttggcacaac tcattcctata 180
 aaacaagact ctgtgagagg gcagagacct tgatcctggg cgtggcaagc cgggtgccta 240
 ttgcggtaaa atcgagaagg gggacccttg aaaagagagg ctgaaatttg ttctattctg 300
 caactgaaac ctaaccggag gccgaatctg atcatttcta agacctttgg ggtcctgggc 360
 atcccattaa aagaacgctg ctaactctcc cctccacaaa gggccaatgc gtcagggtcg 420
 ggcttctcat cttcacattt cttgcccga tctatctgaa tttgttgtat tgaataaac 480
 tgccctctac acggtcac 498

<210> 174
 <211> 604
 <212> DNA
 <213> Pinus taeda

<400> 174
 aggtgaccgt gggcgccgtg gctcaaaagg ccctcgcaga cgcccgtcc atcaagctca 60
 tgggccccct ccaccctcgg ggggcaagcc gggaacgttg ctgtcagacg aggcgaggac 120
 ctggaactgc cgttgaagga acggttctat attcagcccc tctcggcgga ccaggcgctg 180
 cgagagccaa ggaatccgag gaagcaaatc ctggagggtga aaaagctgat agataaaagg 240
 cgtggccgta cgtccagaac gacctccgt ccaaggcttc ttaccttcgc tacgactcaa 300
 caccgttatc tctcaaagc ccaaggaaca gaaaaaaccc ctcaaaacct caccctaaag 360
 cttttttgac acccttgaca aacctggact acgctgcaag gagccaagga taccctaaag 420
 gcagaaaaaa tactttgcag aagctggtga accgcctta atgatgttca ttccaagctt 480

ggttaagctg tattgcactc attgttaacc acacttaacg ccaatccaat ctatgctgtg 540
 ttgcatctcc acttcttagt taataacggt ctgtgttccc aaactctgtg ccacacacgg 600
 tcac 604

<210> 175
 <211> 561
 <212> DNA
 <213> Pinus taeda

<400> 175
 aggtgaccgt acaatacaaa taggtagttt atcacattgt agcttataga atgtacaatt 60
 gaaatcaaat aaattcaacc aaactcaaat aatatgatca tgtgtctctc accttctcag 120
 caaactcgta gagcagaaaa aaggattatg ttaaatacaca gtacacacat tagggtaaat 180
 cccactaaat gacctctctt cattatccaa gtatctgaca ccaacatatt tcaaacaaat 240
 agtgcaaaaa ggaatggtga agtaaaatag tcaaaactaa aaaataagct taaaatttct 300
 cacatgtttg aatatgtgca ccacaaattt tgttagtgtc atcaaaatgc atgtaatcaa 360
 cttgccgtgt atataatttc acacaatatc cgtaaaattt tgcaattcct tatgagcatt 420
 tcatgtctag agattgcaat gacttggcta caaacatgtt tctctacaca agatcacaat 480
 atttagtcag gacacgaatt gcaatgggga ttctcacaag catcacaagt catctcccat 540
 gtactaaaaa attgtttaa t 561

<210> 176
 <211> 382
 <212> DNA
 <213> Pinus taeda

<400> 176
 aggtgaccgt atagtgcata ttcagattgc aattacagac gtattagaac cagatttttcg 60
 cttcgatata gctcatcgag agcaacagag atccagatca aaaaccagac acagtttaag 120
 aacatcgaaa taccaagccc agggacagtt accagcatat agctctacca ccaacagatt 180
 attacagaac caaaacataa gaccacttgc agacaaaaat aaaccctaac gcagaacgtg 240
 gcaactatct cctccageta ccaccatcgg aaccaccacc accatagcga gaaccccacc 300
 accaccatag ccgccaccgc caccaccata accaccacca ccaccaccac tgtaccgcga 360
 ctaccgccat aaccacggtc ac 382

<210> 177
 <211> 196
 <212> DNA
 <213> Pinus taeda

<400> 177
 aggtgaccgt ccttggagat accagcttca aaacctccag tgggtggagtc gatgatcaaa 60
 ctgcacagtc agcctgagat gttccagtaa tcatgttctt gataaaatca cgatggccgg 120
 ggcatacaat acagtgcagt agtatttagt tgtctcaaac ttccagagtg caatatcatt 180
 gtgataccac ggtcac 196

<210> 178
 <211> 141
 <212> DNA
 <213> Pinus taeda

<400> 178
 aggtgaccgt atagtaggaa ctttaggtgc tttggtggca ctctccaatt ttcatgtcct 60
 tacatacccc actacggaga agggtagccc aagatttgaa ccaagactt ccggttcgtg 120

agacttcatt tccacggtca c

141

<210> 179

<211> 478

<212> DNA

<213> Pinus taeda

<400> 179

```

aggtgaccgt aagatcaaga gcacagaaag cagccatagc cccgcccatt gaatgcccatt 60
aacaataatc tgtaacccat ctctctgttt ctgagctttc tgaactgctt ctacaacagt 120
ggtcgtaagg ttgtgtttgtg ataagcagag taaaatccat aatgtaccat tgcaccagca 180
tattaggata gttgagatca agtgtcttac agaataaatc ctccacccaa ttctgtagct 240
cctttcttga gtacccctga atgcaattac aattgcattg atatcttctg ccacaccaca 300
aaagcctgaa ggcagtgttg tacatcaact ataagctcta ccacctgaaa accccagtca 360
aaccattgca cctagaacaa gtccaagaca ttagagcact caaatcatcc ataagaccgc 420
agaagcatat tgcacaagta tctcagcaag tgttcgatta tagacatggc caggtcac 478

```

<210> 180

<211> 381

<212> DNA

<213> Pinus taeda

<220>

<221> modified_base

<222> (58)

<223> a, t, c, g, other or unknown

<400> 180

```

aggtgaccgt gggaggggag atttttgatt tatattttcca atataaaaaga aaatctangt 60
tgtaaggaca tggcaagagc tcttattttcc ggggttttag ccgtggcccc gagcggatga 120
aagcaaatgt aagtcactcc gtgctttctc ggcatttgga cgcttctact ctaccgcact 180
acagacggga ttgaacctcg catctctgag tgtttggtcg tttacatggc ggacttggtc 240
cgcacctctg cggacgtcaa atgccgcgac gataatccct ttgagaacag cgatacggca 300
gaaagatcgc cgttgacgaa gcgagaaaac tattgagact tgcagatgtg gagctgaaga 360
agagcttgag tcgacggtca c

```

<210> 181

<211> 521

<212> DNA

<213> Pinus taeda

<400> 181

```

aggtgaccgt ccgttcgggg ttgtattgtcg aacacgtagg atggtgctac gttgaaacca 60
ccgttacctt cttcgatatg ttatagttcg agttcatacg gaggggaatac cgtttgtagt 120
gttatttcagc acaaccccggt cctgattaaa ccccccgca accaaggacg tattcgacgt 180
tcggtattgt ttgacacact caagttataa ccctgaatag gcgctacccg aagtaagcat 240
tgtaccagtc gttatttttg ctttcgtatt gcgaaggatt ttgaaatata tccggacagg 300
ctgcaaccga tcttcataaa actctttctt aaactgagca aactgaacag cattagcatt 360
ttgaccgcgac ctttcacatcg cacctgctgc acaccgcgat acgtattaaa gctatgttcg 420
tctggccagg tttgcctttt ttggttgtaa tcaggacaac gccgttagcc gcccgcgatc 480
cgtagagcga cgtagaaaagc cgcattcttc agcacggtca c

```

<210> 182

<211> 307

<212> DNA
<213> Pinus taeda

<400> 182

```
aggtgaccgt gaaatatgtg ggagatgata tgtggtttcc tgaatattca cctcttgtgt 60
agaaaagtga gatccttaag atgttttgct aataagactc ttaggaatgt tggaccctt 120
tcagaatgcc atttgaatag attcaagggtg gtagctgttg cctggggctg ttttaggggt 180
ttaggccatg ctctgtaatt tcattgagtc aaaattggat taactgggtg cttttacctc 240
ataatagcta ctgcagtatt tgtcgatata gcttcctat ttattgactc tccttaggta 300
cggtcac 307
```

<210> 183
<211> 519
<212> DNA
<213> Pinus taeda

<400> 183

```
aggtgaccgt ccgttcgggg tgtattgtcg aacacgtagg atgggtgctac gttgaaacca 60
ccgttacctt cttcgatatg ttatagttcg agttcatacg gaggggaatac cgtttgtagt 120
gttattcagc acaaccccggt cctgattaaa caccgccgca accaaggacg tattcgacgt 180
tcggtattgt ttgacacact caagttataa ctctgaatag gcgctacccg aagtaagcat 240
tgtaccaagt cgttatTTTT gcttcgtac tgccaaggat tttgaaatat atccgcacag 300
gctgcaactg atcttcgtaa aactctttct taaactgagc aaactgaaca gcatcagcat 360
tttgaccgca cctttcatcg gcacctgtg cacaccgca tacgtattaa agcaatgttc 420
gtctggccag gtttgccctt tttggttgta acaggacaac gccgttagcc gccgcgatcc 480
gtagagcgac gtagaagccg catctttcag cacggtcac 519
```

<210> 184
<211> 629
<212> DNA
<213> Pinus taeda

<400> 184

```
aggtgaccgt cgtcagaaaa aacgtgattt ccgcaaactt tggatcactc gtatcaatgg 60
gcagctcggt tgaacggact ttcatactca caattgatgc atgggttgaa gttggctgaa 120
tcgaagtga cgtataaatg ttggctgact tggctgttaa cgatgcagca gctttcaaac 180
tcttgacgac gcagctaaag ctaagcttgg gtaaataatt aaaaaaagaa ccgaggtttc 240
cttggttctt ttttataact tttaatgaaa agtatgaaga gagaaacagc ctgtcttcta 300
cttatagtat aagataaaaag cttgttactg ataagacagc tttcatggta aagcagttaa 360
aaatagggat ttgcgatata atagaaaaaa cagacgttta tgtaaataaa aaacagtaga 420
atggagaaat tatgtcagag aatcgtttgg cttgggatca gtattttgcg gccaggctct 480
cttaatcgct aatcgctcaa cctgtaagcg agccaaagggt ggctccgtat tgtcaaggat 540
aataagggtt atttcaactg ggtacaatgg ctcagtttca gggactggag actgtattga 600
ccaaggagtg cctggtcatt gacggtcac 629
```

<210> 185
<211> 413
<212> DNA
<213> Pinus taeda

<400> 185

```
aggtgaccgt ggcggagggt agggaagttt gactttctcat tttctcacgc actcctctcc 60
tcgtaacctc ggtcgagtcg atggcggctt tttagtcgag tgtgctaacy caccctccgg 120
cctcaaaatt tccagctact cgtatttgat caatgctgaa atcgcgtaat tacgtagtaa 180
taaagcgtaa tgaattctat aatgaagcat gtttctctat agttcatgtg ccgagaggaa 240
```

taatgaaaat gaggccttat atattatctg gggctcaagg agatgttatc ttttccttcc 300
 ttgggttagag accgtcaacc ttcacttgat tggataaagc ttcattttgt taaaacctcc 360
 aagccagtag atacatacgg taggcacgta ttatggtaga gacatacggc cac 413

<210> 186

<211> 397

<212> DNA

<213> Pinus taeda

<400> 186

aggtgaccgt cctgttgccct aaccgcgaat ccaaatcgac ttgggctgct tcctttcgtg 60
 cagatatttc tggtttggac tctagttcct gtcctcggaa atcatgcttg agtgctgggt 120
 agctgcctcc aagtttgggt gacaggccca ttccttacag cttctctcct ccgcttatga 180
 cagagtaatg acaggaattc aacctgacgg atccgtctag ctctcacaag gttgggaccc 240
 tgtcttcgag agggttattt cttgagactg ttgactatat tttggatgag ccctcagctc 300
 tgtgtactat tgttcacgta ctggatactt tgtaaagatg tttattctgg ttttaccctg 360
 gggggggcat tttgactcct gggtttaata cggtcac 397

<210> 187

<211> 467

<212> DNA

<213> Pinus taeda

<400> 187

aggtgaccgt ggaacatgat gattagttct tctgtgggcc aggatgatta gttctctgtg 60
 tgactgtggg ccaggatgat tagttctcct gtgacgactg ttggatagga tgattcgtct 120
 cctgtggaca ggatgattag ttctcctgtc gaggcacct acccatgcaa tttgggatca 180
 tgggaagtac ctctcatctg atcaatgagt agggaaatgg ggtagggac cattagagta 240
 ctatcgatgg acacatcggt gtatctaccg tcctatgcta ggacgacctc cattgtttgg 300
 gattagtgg agtggtatga cactctgaga ctgactttgg gtcagtggag gatgtatgat 360
 acatcctcga tcatttcttc ttcttcacag ttcgagcaga gcagagcaca acaggccaag 420
 tagtgacagg tagtgcatct gatggctggg atagtagcga cggtcac 467

<210> 188

<211> 555

<212> DNA

<213> Pinus taeda

<400> 188

aggtgaccgt aaataagatg acccacatgg agtttggccc tagttttcaa ttttaacacc 60
 gctctcaact agggagaact ccattcgtg atccatttgt ccgactatac tatctctgca 120
 tcagtgcctt acactactct gcactgctct gctctactaa accatgaaga agaagaatga 180
 ccgagaatgt ctcatgccat tctctattga cctgaagtta gtcctatatg aagagatgtg 240
 tcatatcact cttattgacc caaagtcagt tttattgatc ccagatcaat atcacagaga 300
 gtgtctcaaa ccactcatac tgatcccaga tcagtttcat tgatcccata tcaaggagat 360
 catcctagaa tagggagtac agtagataca atgatgcac catcaatagt actctatggg 420
 ccctaaccctc atttccctgc tcattgatca gatgagaggt acttccgatg agccacact 480
 gcatgggtag gatgcctcga catgagaaat aatcatccta tccacaggag acgaatcctc 540
 ctgtcccaac gtcac 555

<210> 189

<211> 695

<212> DNA

<213> Pinus taeda

<400> 189

```

ctaggggaaga ctttaaaagt ttgtaaaact aagcatagct cttaaact gaagttaaag 60
acatgattgg aatgtgcaag tgggtcagta tccaaatatt gaaggttgca gaatatgggc 120
tactgtgcaa acgagtaact ttatctatat ttccacaaga tcatacaatg ggaaacgtga 180
gataacaact gcatcgggtga accagaatag ttataaaagt tcttgcaagt aaaggggtgaa 240
taattgcatg gtgtgaatta agaatgacca tgtagagctg ctatacagac ttctcaaggt 300
tttatatttg aggagtgcgc gctattgatg ttgtgcaaaa atttcagaaa ttaattctgc 360
ggcattttatc aagggttggtt gagccattta aatagcaagt ttttgtttct ccagtacttt 420
caggaaagca ggtagacga taaaatgcat ctcccaatt tactatattt ctgtttttaa 480
agattctctc aatgtcctta gcacgtggct ttcattattg ggaccaatga agatgtgtag 540
cagaggcatt acgttatgga atctctcacc aagaacactg ttttgggctt tagatagctc 600
ctagttataa atgctccagt gacaaacaca tcctaagttt ggggcaatta atgacgcctt 660
ttgggtcattc tcctttgggt ttcaggcacg gtcac 695

```

<210> 190

<211> 144

<212> DNA

<213> Pinus taeda

<400> 190

```

tcccttttagt gagggttaat agatctatag tgtcaccta atcgcgggccg ctctagaaca 60
gtggatccgc aagcaggata gacggcatat gcattggatg ctgagaattc gatatcaact 120
tatcgatacc gtcgacctcg aggg 144

```

<210> 191

<211> 185

<212> DNA

<213> Pinus taeda

<400> 191

```

ggtgcgatcc taaacatgca agctttgagt ttgtaaacttt gtagaagtgg acattttctaa 60
gttgatgta caaatctact gttgggttga ttgtcatccc ataaacaact gtttgatgag 120
atgttttttt aaaaaccaca tcataatatt tttaggcctt gtaaaaaaaaa aaaaaaaaaa 180
aaaaa 185

```

<210> 192

<211> 167

<212> DNA

<213> Pinus taeda

<400> 192

```

attccaaact tttctttcaa gatgtacacc aacatcattg tccccaactt agtagacttg 60
acttttcacc aggtccaaag agaggggtgg tggaagcaga tttcaggctt tcgaataagt 120
atcaatgata taagcatcat ccccttgcca attgttctgg atcgcac 167

```

<210> 193

<211> 167

<212> DNA

<213> Pinus taeda

<400> 193

```

ggtgcgatcc catcaggggt tgtgtttcta agaatacatt ccatgtttca aattcagcac 60
ttgatcttgt acatacccaa tttgttgctt gctactagct agtattgtct ttcagtttga 120

```

accatttttt tgagtaaatac gtgttttagtc tttggcaaaa aaaaaaa

167

<210> 194

<211> 470

<212> DNA

<213> Pinus taeda

<400> 194

ggtgcatcc	gcattagaga	agcatcacagg	aaaaagaagt	acctgcctct	tgatttgccg	60
ccaagaagac	tcgtgctatc	aggcgacgcc	ttaccaagca	tcaggcatca	ttgaagacga	120
gagacagaaa	aagaaagaga	tgtattttcc	aatgagaaa	tatgcagtca	aggtgtaagc	180
cacaggattt	gagctttcat	gcaatttttt	tgttacttgc	gggatgatat	tgccatatata	240
tttcgcgtcca	cgtttttgcc	aaattccgat	ttgcacacaga	attcaagtta	tgatagtgtt	300
ctttcgcttt	tgagcagttg	atattgttta	tcttttattt	ctcttgaatt	gcaacatatt	360
ctaatagcaat	gagtgagatta	ttatattgtg	gtatttccat	gttgaactca	tataaatgag	420
cgtaatttga	gtggtagcgc	taggatattt	acacttgga	aaaaaaaaa		470

<210> 195

<211> 289

<212> DNA

<213> Pinus taeda

<400> 195

ggtgcatcc	gtataggtag	tttgatgat	gaacgggcaa	agaaggcaaa	ggagtacagg	60
atggatcctg	taattcctgt	ttcagaaaac	agaaaatctg	caatataagg	atggctaact	120
tttcagctat	gaaaatatat	ggtgcagtgg	cactcatatc	agttgcagag	ttgtcaataa	180
acttttgtga	ataggaaaagt	tgccctcttt	tagagtgcag	aaatcctgca	atataagatg	240
gctaagtttt	tcagctatat	gaaaatatat	ggtgcagcaa	aaaaaaaaa		289

<210> 196

<211> 321

<212> DNA

<213> Pinus taeda

<400> 196

ggtgcatcc	catatacaat	tacatatatt	ttcaacaatt	cttttgttgt	tatgaaaatc	60
tattgaaata	aattgaaata	gtttgcatca	tttattttatc	ggaattcgta	tttatatatt	120
aaattttctga	tgtctcaaat	ccttcggttac	tgtaacgata	tcattaatat	aatgtgtctg	180
caagttttatt	gggcaaaaaca	aaattttattt	ttcggtcaca	tcataagttt	attttttggtc	240
acatcatatg	caccatcaca	ttaagcataa	gcatatacag	tagcgtaaaa	atacaattat	300
tgttgttgac	taggatcgca	c				321

<210> 197

<211> 188

<212> DNA

<213> Pinus taeda

<400> 197

ggtgcatcc	tagtcaacaa	caataatatg	tattttttacg	ctactgtata	tgcttatgct	60
aatgtgatgg	tgcatatgat	gtgacaaaaa	aataaaactta	tgatgtgacc	gaaaaataat	120
tttgttttgt	ccaattagac	ttgctgtata	tgtctggagt	cctacccttg	aaaattgact	180
tgtttccc						188

<210> 198
 <211> 145
 <212> DNA
 <213> Pinus taeda

<400> 198
 ggtgcatcc catatacaat tacttatatt ttcaacaatt cttttgttgt tatgaaaatc 60
 tattgaaata aattgaaata gtttgcacatc tttatttata ggaattcgta tttatatatt 120
 aaatttctga tgtctcaaat ccttc 145

<210> 199
 <211> 151
 <212> DNA
 <213> Pinus taeda

<400> 199
 ccactgcacc atatattttc atatagctga aaaacttagc catccttata ttgcagattt 60
 ctgttttctg aaacaggaat tacaggatcc atcactgtac tcctttgcct tctttgccgt 120
 tcacatcca aactacctat acggatcgca c 151

<210> 200
 <211> 254
 <212> DNA
 <213> Pinus taeda

<400> 200
 agagccttct tgcagacaat ccgtgaaaac atggctatac aataaaaatt cccagtttga 60
 attctaaaga aaactgttca atatttgaag gcctctgata tcacagagac tgatattaaa 120
 tggaaattca tacaatgag gagagcatgt agcaacacta gaagctttgg cataaagcac 180
 cagataaatt cataagaact aaatccataa gaaggatctc tcgttcacca gtcacaatca 240
 cactcgatc gcac 254

<210> 201
 <211> 363
 <212> DNA
 <213> Pinus taeda

<400> 201
 ggtgcatcc ctggccctga taacttttgt tgcaatggaa aatgcagtac taggtgcaa 60
 atgctaaagc ccgcccggag cgggtgcata agtactgcaa tatttgttgt agtaaatggc 120
 tggttgtgtt cccagtggtc actatggcaa caaggacgag tgcccctgct acagagaatg 180
 aagtcgcag ccggcaagcc caagtgtccc tgatcttagc acttcagtc agtcgccact 240
 tcttttatcc tcttttttta taaaagtgc gaggcggtt ttcttgtgct tgggtgccata 300
 tgtagagcgg tggctacttc tcctgtgtta ggaaatgttg cagtactaat aatagaactt 360
 ctt 363

<210> 202
 <211> 162
 <212> DNA
 <213> Pinus taeda

<400> 202
 ggtgcatcc aataaagata tactttgcaa caataatcaa aatatcatta tgcaaagttt 60
 aagatcaaaa tagaatgcaa caaaaaaatg gttgtaacat aggaaccaac aatgttgcac 120

tcaagtaaga ctctttgcaa aaaaaaaaaa taaaaaaaaa aa

162

<210> 203

<211> 355

<212> DNA

<213> Pinus taeda

<400> 203

ggtgcatcc	acaagtaaga	taattgagta	tatattcaag	atgcaaatat	ttcattagga	60
ccactcataa	agttatcaat	gattcacaaa	gagacctcct	gacctctctc	aaaagtgggtg	120
gcaacacaag	actagtgtag	tttttactat	acctcaatga	aactaccatc	ctaactgatg	180
ccataatcct	ctgttatata	ttaccaaaat	ttatgagatg	attgatccat	aaacactcca	240
gaacacatag	tcacccaaag	gaacctttgc	ttgaatatgg	accccttaa	ttcaggtact	300
tgctactcca	ataaattgct	taatctctcc	accgataacc	acagtttgga	tcgcc	355

<210> 204

<211> 297

<212> DNA

<213> Pinus taeda

<400> 204

ggtgcatcc	aggacatgag	gccgagtttg	ccattgtgat	atgattgagg	aagtccagtc	60
tcaaaattag	gtttatcttg	atgtttgaca	agaaatatag	aagggcatga	tgaatcaaga	120
accttttcca	aatctgttac	tgcaaccaat	ccaatgacat	aataacgcca	atgggtgggtt	180
cctgtgatga	cataataaat	tggattaaat	taataacatc	cctaattgcca	tgtgggttagc	240
tgcatcatca	ccgtatccat	cgagtgttca	atttttggga	tgtatgtatc	aaaaaaa	297

<210> 205

<211> 337

<212> DNA

<213> Pinus taeda

<400> 205

aaatattttt	caatacaacg	ccatgtgaca	tttttgtgct	tcttgttttt	gatacatact	60
tccaaaaact	gaacactcga	tggatacggg	gatgatgcag	ctacagccat	tgcattacga	120
tgttactaaa	ttaaatcaat	ttattatgtc	atcacacgaa	cccaaacaat	agcgctatat	180
gtcattagaa	tggttgagc	tacagatctg	gaaacagatc	aatgaatcat	catgccctct	240
atatctcttg	tcaaacatca	agataaacct	aattttgagg	actggacttc	ctcaacatat	300
cacaatggca	aactcggcct	catgtcctgg	atcgcac			337

<210> 206

<211> 344

<212> DNA

<213> Pinus taeda

<400> 206

ggtgcatcc	gtataggtag	tttgatgat	gaacgggcaa	agaaggcaaa	ggagtacagg	60
atggatcctg	taattcctgt	ttcagaaaac	agaaaatctg	caatataagg	atggctaact	120
tttcagctat	gaaaatatat	ggtgcagtg	cactcatatc	agttgcagag	ttgtgaaata	180
acttttgtga	ataggaaagt	tttctgttt	tagaatgcag	aaatcctgca	atataagatg	240
gctaagtttt	tcagctatat	gaaaatatat	ggtgcagcag	agttgtcaat	ataaacttgt	300
gaatagggaa	gttttggcaa	aaaaaaaaaa	aagaaaaaaa	aaaa		344

<210> 207
 <211> 349
 <212> DNA
 <213> Pinus taeda

<400> 207
 ggtgcatcc tcgttgtag gacgtagtga tggaaaggct atgtttgtag gagacataat 60
 tataggagtt tctttattat aataaccaag aagtccgac ctggggggcgt tgagtatata 120
 gtcagtcttt ggtaatttgg tgtggtgctg tttgacctgc ctttcctttg gagcaatgat 180
 ccttgaggat ggaagagggt atgttgaggc tcaagagatg attgtttgag ttgtggaaag 240
 caaaagggtt ccagatgtag tcagatagta acttctatgc ttttaataaa atttagtctg 300
 tggggcatgc ccctttttgc tggcaaaaaa aaaaaagaaa aaaaaaaaaa 349

<210> 208
 <211> 317
 <212> DNA
 <213> Pinus taeda

<400> 208
 ggtgcatcc gtataggtag tttggatgat gaacgggcaa agaaggcaaa ggagtacagt 60
 gatggatcct gtaattcctg tttcagaaaa cagaaaatct gcaatataag gatggctaag 120
 cttttcagct atgaaaatat atgggtgcagt ggcaactcata tcagttgcag agttgtgaat 180
 ataacttttg tgaataggaa agttttcctg ttttagaatg cagaaatcct gcaatataag 240
 gatggctaag tttttcagct atatgaaaat atatggtgca gcagagttgg aaaaaaaaaa 300
 aaaaaaaaaa aaaaaaa 317

<210> 209
 <211> 389
 <212> DNA
 <213> Pinus taeda

<400> 209
 ggtgcatcc caggagaata ttagtttcat gtgttgctat ctttttcttc aatatgcagg 60
 gcaaccattt gaatgaaact attcctttcg aatttcaaaa acttaataag ctaacttata 120
 tatctggagc cgattttcat tgacgagtaa cctgtaagct ggccagcaaa agccaacaga 180
 tgttcagctt gttggaacca gttgaagatt gtaatagaga tgggtaataa tcgcgacgg 240
 ctgggcaaat ggaatatttg ttgcatcatc atcaaggggg tatgaattcc aaagaacttg 300
 ttgattgaaa ttccaagca aaattctgtg aaatgaaaaa tttattgaga ccattgggca 360
 aaaaaaaaaa aaaataaaaa aaaaaaaaaa 389

<210> 210
 <211> 242
 <212> DNA
 <213> Pinus taeda

<400> 210
 ggtgcatcc gactgtgata tgtgactggt gaacgagaga tccttcttat gaattaatct 60
 ggtatcttta tgcgaaagct tctagggttg ctacatgctt ccatttcta atcagtcctc 120
 gtgatatcag aggccttcaa atattgaaca gttttcttta gaattccaaa ctgggaattt 180
 ttattgtata gccatgtttt cacggattgt ctgcaagaag gctctttggc aaaaaaaaaa 240
 aa 242

<210> 211
 <211> 319

<212> DNA

<213> Pinus taeda

<400> 211

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tttttttatt tttttttttt ccaacgagat cactgtcatt gttcaataac tatatgccaa 60
agagccttct tgcagacaat ccgtgaaaac atggctatac aataaaaatt cccagtttgg 120
aattctaaag aaaactgttc aatatttgaa ggcctctgat atcccagaga ctgatattag 180
aatggaaatt catacaaag aggagagcat gtagcaacac tagaagcttt ggcataaaga 240
caccagataa attcataaga actaaatcca taagaaggat ctctcgttca ccagtcacat 300
atcatactcg gatcgacc                                     319

```

<210> 212

<211> 271

<212> DNA

<213> Pinus taeda

<400> 212

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ggtgcatcc gactgtgata tgtggctggt gaacgagaga tccttcttat gaattaatct 60
ggtatcttta tgcgaaagct tttaggggtg ctacatgctc tcctcttttg tatgaatttc 120
cattctaata tcagtctctg tgatatcaga ggccttcaaa tattgaacag ttttatttag 180
aattccaaac tgggaattta ttgtatagca atgttttcac ggattgtctg caagaaggct 240
ctttggaaaa aaaaaaata aaaaaaaaaa a                                     271

```

<210> 213

<211> 30

<212> DNA

<213> Pinus taeda

<400> 213

```

tcccaaaggc aattatacat ggatcgacc                                     30

```

<210> 214

<211> 517

<212> DNA

<213> Pinus taeda

<400> 214

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ggtgcatcc ccaactgcaga aagatgagcc agtaccctga aattttgctg ttgtccatgc 60
ctgggtcacg gaggaagaa cggcacggtg caatatgatt ttgctacata caagttccaa 120
gagtggatgc agacagtgtt ggccatggct gattatttgc aggtgactaa tgctcttttg 180
gttatcctta ccatcatcat ctccctgcca ttcttttgta cctcggtagt gagacgaaca 240
cccacttttc aaagtgttgc gaggaagcat gtattcataa caggaggatc aagcggcatt 300
ggccttgaga ttgccaaaga ggctctttca cagggttctt acgtgacact ggcgtcaaga 360
aatctttcta aacttcgtag ggctgttgaa gaaatcatcc aagaagtgga gtgacgacga 420
gacaagatta atatcaaggt aatataccct gcaaaatggt gtctggaata caatccaaaa 480
ccaatttagc aattaacca ttggcaaaaa aaaaaaa                                     517

```

<210> 215

<211> 734

<212> DNA

<213> Pinus taeda

<400> 215

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ggtgcatcc aagtgcggtt ttcttctttt ggcagttctc tgaactgttg agagaatttg 60

```

```

agtaggataa cgacaataat tactatgctc acaagcccag acaacacgaa tagactccct 120
tccgtgcgct gccttccaga ggacgcagca gctaaaatct cggcctgact caccacatat 180
atatttaata gcttgatatat gccatatgaa ctggttagcat gatctccctc taactgcgaa 240
ttgtgttgct gtaaaactaat cccaaaggat gtttactctg ttgcttttcc aactgctgat 300
ggatttcgct catacaatga cccgagagca ccataaacct acccagcgtt gtggcctatg 360
acccatagct ttttggtcgc acagcaattg aagaccggct acaggagatg actaatgcac 420
ttccgagaag gtttcaccgc gaatgacagg gaaggacaag gcagagcagc aggccaagac 480
agcttttagtc gcagaagttc aagcagatct agattcatag taaatggaag ttctacacta 540
gttacaaatt taaaaacgta cctgcatgga ctacacgggt tatttacgag tgccacttgt 600
ctcattgttt tccatcagat gtctgctgga ttgtggtagt gtgttctacc gtatcgggtgc 660
gggttttgta tattgtgcgt cgacagagtg acagggtggtg attttactgg caaaaaaaaa 720
aaaaaaaaa aaaa                                     734

```

<210> 216

<211> 664

<212> DNA

<213> Pinus taeda

<400> 216

```

ggtgcatcc tagtacaggc gtttggaaaca gagtggagaa tatgtggagt attgggggat 60
gccccggctc gtgtgttgct gcgtttggga atttgtatct cttccatagg caacaagtga 120
tgtcttataa tagtaaagag aatgtttggg aagtgggtggc atctcttcct ggagacatga 180
atattgttac tttgcgcaac agtgtgtgtg gacaagatat ttgtgagcgg ttgtgcttgc 240
agtggcggcg atcagggtgtg ttacatgctg gacaaatctt gggcgtgggc tcctattgag 300
aggtcacatg agtttgagggg ttttgctcag tctgcaataa ctgtagagat atgagcaaat 360
tctgttgggt tcaacttaatt ttgggattat tatagtgcag aggggagccg ggaagtttca 420
gtgtacagtg atgggcacca catgttgcca gcattggggg tgccctgtga atatgatttc 480
tataagtcog gattttaaat atctaggcca tctatctcat ccagcctctg attgtgtctg 540
tactaaatat atcctgtata ttcgtgatcc ctggttttga agtgagcaag ttttagtgga 600
agaggatttt tattaaatat atataaagtt tctgtattca gggttttggc aaaaaaaaaa 660
aaaa                                             664

```

<210> 217

<211> 422

<212> DNA

<213> Pinus taeda

<400> 217

```

ggtgcaatcc gccataagag aggcatacag gaaaaagaag tacctgcctc ttgatttgcg 60
tcccaagaag actcgtgcta tcagggtgacg ccttaccaag catcaggcat cattgaagac 120
tgagagacag aaaaagaaag agatgtatct tccaatgaga aagtatgcag tcaagggtga 180
aagccatagg atttgagctt tcatgcaatt tttttgttac ttgcgggatg atattgccta 240
ttatatttcc gtccacgttt ttggcaaat ccgatttgca tcagaattca agttatgata 300
ggtgttcttt cgcttttgag cagttgatat tgtttatctt tatttctctt gaattgcgaa 360
catattctaa tgcaatgagt ggattattat attgtggcaa aaaaaaaaaa aaaaaaaaaa 420
aa                                             422

```

<210> 218

<211> 239

<212> DNA

<213> Pinus taeda

<400> 218

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gcggacgcct caggatagcg ttagggttgc cttaggatag cgttagctct gccttctaag 60
gttgccgtct tatcctccag cgtctagggc ttccactcct aggatttctc ttccactaaa 120

```

acccaagaca agtggagaga aatcaagata gaagtgtgtg tgaaatgact ctttaagtcac 180
ctccttttag actaaaacat tgagcacatg tggggtttat ttggttgctg gccgtcgtt 239

<210> 219

<211> 303

<212> DNA

<213> Pinus taeda

<400> 219

ggtgcgatcc tgaaacaaca tattcccgat ggctcttcg aaggaaccat tgctctactg 60
tgtggccctc ccccatgat ccaagatgcc tgcctaccta acctggccaa aatgaattat 120
gacattcaga attcgtgttt tcagttctaa ttacaccctt ctggttaatc aaattgggac 180
atcccctccc acatcctgtt attaattaag ccatagtcta gtgtataaaa tctgttgatg 240
tgtacagcat caagttaatt tcctcctttt ctgtcaaaaa aaaaaaaaaa taaaaaaaaa 300
aaa 303

<210> 220

<211> 273

<212> DNA

<213> Pinus taeda

<400> 220

ggtgcgatcc gatcctaagc ggtgcatat atataatgac aagctgtagt aactaactct 60
tgtcatgagg ccattgctaa catagcctgt ccaatgcaca tagcagtcaa aaaaagcaaa 120
tagccgccat gttcccatac acgaagtaag taccctccct attgagtcac cttacccgcc 180
gagagagatc ccaattccat gtattcggtt aagtaagccc tgccagctat gtcccaccca 240
tgaaagaaag tactgatccg agtggatcgc acc 273

<210> 221

<211> 364

<212> DNA

<213> Pinus taeda

<400> 221

ggtgcgatcc aaactgtggt tatcggtgga gagattaagc aatttattgg agtagcaagt 60
acgtgaatt aagggggtcc atattcaagc aaagggtcct ttggatgact atgtgttctg 120
gaagtgttta tggatcaatc atctcataaa ttttggtaat atataacaga agattatggc 180
atccagttag gatggtagtt tcattgaggt atagtaaaaa ctacactaag tcttggtgtg 240
ccaccactt ttgagagagg tcaggaggtc tctttgtgaa tcattgataa ctttatgagt 300
ggtacctaat gaaatatttg catcttgaat atataactcaa ttgatcttac ttgtggatcg 360
cacc 364

<210> 222

<211> 357

<212> DNA

<213> Pinus taeda

<400> 222

caatctgtct gcaattgata ttattgcac cagtaaacca gatacacatt caccacaaca 60
ttagagactc tagaagttcc tttggcgaca ggcaaaactc atgattacag ataattggag 120
tttctcttaa ccagagtcaa acgatctaaa gggatttgct tagtctcca ttccctcatt 180
caatgaggcg atggcttatg ccgtgacaac agtttctata gttgcatccg ctccctctga 240
tcccacaaca tttttggtgt tctctgcac ttcttctcc catatctctg gcagggttcc 300
tctaattgtg tgaatacttg caagggcaaa atctgctccc tctgttcgga tcgcacc 357

<210> 223
 <211> 222
 <212> DNA
 <213> Pinus taeda

<400> 223
 ggtgcatcc tctcagttac gagctcaatt tcgaccaggg gtctcggcaa attgaggatc 60
 atgagaagca gggatatgcc ttgaatgccc tgaagccagg ggagtctcag ggcaatcacg 120
 aatgaaacct gacaaacct aagaaaacct ctagagcgtg ccctgcagaa agggaattct 180
 ttttgaggcc ggcggtcttt ctgtcgtctt ctgcagccg ta 222

<210> 224
 <211> 225
 <212> DNA
 <213> Pinus taeda

<400> 224
 ggtgcatcc agcaagagaa cgaaaaaggt atgagaatct atgaaatatt tgtacatcac 60
 tgtattcata tgagggcctt tttttacaat gcggtagggt tgtttgaggaga attagaacct 120
 gattaaaatg tagatggatt caagctttta gtgaaatgag gctcggaaacg caagtatgct 180
 gtccactttg agactcattc ttctatagta tctgaagcca aagcc 225

<210> 225
 <211> 415
 <212> DNA
 <213> Pinus taeda

<400> 225
 ggtgcatcc catgggatag ttgcaaaaca cacaattttg ttgtgaaaga agagagacac 60
 gcacagacaa ccatatgata tttttttttt tttttttttt tttttttttt tttttttttt 120
 ttttcacaac tctgctgcac catatatatt catatagctg aaaaacttag ccatccttat 180
 attgcaggat ttccgcattc taaaacagga aaactttcct attcacaaa gttatattca 240
 caactctgca actgatatga gtgccactgc accatatatt ttcatactg aaaagcttag 300
 ccagccttat attgcagatt ttctgttttc tgaaacagga attacaggat ccactcactgt 360
 actcctttgc cttccttgcc cgttcatcat ccaaactact atacggatcg cacca 415

<210> 226
 <211> 229
 <212> DNA
 <213> Pinus taeda

<400> 226
 ggtgcatcc tgcgagagcc gaggggttcat tttcctttcg acaacgacgt tcagtggcga 60
 ccagagtttc ccaatcactt cagcgattct attccttcgt tgtaataaag cttaaggaat 120
 ccattgcttta ttccttgga ggtttgaata tttatatttg ttggcattaa tgctatatac 180
 atctatacta attttgggtt gttctaaact tgttttgaat aacttaaat 229

<210> 227
 <211> 219
 <212> DNA
 <213> Pinus taeda

<400> 227

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ggtgcatcc atggcaaaga gctcggtcaa gcacgatcat cctccagaga gaagacaagc 60
tgaagcttct cggattcgag aaaagtatcc ggacaggatt ccggttattg tggagaaggc 120
tgagagaagt gagatacctg atattgataa aaagaaatat ttagtcccag cagatttgac 180
tggtgggcaa tttgtttatg ttgtccgaaa aaaaaaaaaa                219

```

<210> 228

<211> 405

<212> DNA

<213> Pinus taeda

<400> 228

```

ggtgcatcc cctgtattct tgaaagggtt ataacggaag atagcatttt gctcagattg 60
tagacagtct gcatgatttg tcaatactac tatttcgcat tatttggttaa tactactaat 120
ccttgacttc atctagacta ttttaattatt aaattctaca gtttctttct cctagatggc 180
aaacaatatg aataaaaatgc caatagtttt ggaactactc cattaagagc tttagatgat 240
tatcattcat catttgccctg ttttgaatcg taaatgaatg tgtcacgggc ttcttttctg 300
ttagtctcta tgctttcctc agaagagtct aagccagtta ctggaagcta tttgtcatct 360
ctttaaacat tgtttccgtg ccaaaaaaaaaa aaaaaaaaaa aaaaaa                405

```

<210> 229

<211> 329

<212> DNA

<213> Pinus taeda

<400> 229

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ggcagaactt ccaaagtcta gtatttgatt aactaatatg atgaagacac tcagtctata 60
acatgacgcc agaaatcaga ccatatgcat gataactagc acgattaaaa tacaattcgc 120
aacctttaat aactaaaaaa cgtttactgt atagtccact cagaacattt cgatagtatt 180
gtcagatcga cttatttagc tcatattcag caatctgaac tgtacgatgc ggctcattca 240
agggcatttg ggtttgccct tggcattcct catatcccga tagcaaggac acgcgttctt 300
gttgccatat gtccctgggg gatcgacc                329

```

<210> 230

<211> 354

<212> DNA

<213> Pinus taeda

<400> 230

```

ggtgcatcc acattggcca ggccggtatt caggtcggca atgcctgttg ggagctttac 60
tgtctcgagc acgacattca gcctgatgga caaatgccaa gtgacaagac cgttggcggc 120
ggagatgatg cattcaacac atttttcagt gagacaggtg ccggtaaagca tgttcctcgt 180
gccgtgtttc tggatctgga gccaaactgtc attgatgaag ttcgaaccgg cacatatcgg 240
cagctttttc acccagagca gctgatcagt ggcaaagaag atgccgccaa caactttgct 300
cgtggccatt ataccattgg taaggaaatt gtggatctgt gcttggatcg cacc                354

```

<210> 231

<211> 271

<212> DNA

<213> Pinus taeda

<400> 231

```

ggtgcatcc cagcattgga tgcattttcta gcacaaagcc atcttgacta aaatagcact 60
gcgggcaact gcagtcata actttcagag cattgttgct gcctcaattg tataccaatc 120

```

```

catattctaa aaattagacc tggaaaccag tcagaaattt aatgttttct tgcagaaaat 180
gcccttttag aaaaaggaga gaataactgc attcaagttc taactcccag acatagcctg 240
gcaacgtcat tcattcagtt cggatcgcac c 271

```

<210> 232

<211> 370

<212> DNA

<213> Pinus taeda

<400> 232

```

ggtgcatcc agaaaacagc acaagcaatc tgtaagacca atattattat catctctcac 60
tgctcgtgaa caaatgctg gttcatagcc atcacgaagg ctaaggctac tatccagcca 120
aactgatctc caacaataat ttcataagct taaataaata gtccatccag tggatggagc 180
cagaaagcca tagaaacttc aaataacttg ggtatcaatc tctcctctgt taagggaggt 240
atcagatcag aagcactaat caaatgcata cataaatgca gtagactgca ataaaacaaa 300
atctgcagat agcaactgag cgcttaacga acggaaaaga gtttaacttg atctatcaca 360
ggatcgaccc 370

```

<210> 233

<211> 328

<212> DNA

<213> Pinus taeda

<400> 233

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gaaaatggga gcctcaaata ttcaaagcct catctcaaga gtctcagatt cggattcatt 60
tcatttggtt cgtaataaaa taatgcatca aatagttatt atccacaaaa atggggagaat 120
tattacaatc tgtcttctca acataaagtc atagcatagc atagaaccac accacagtcg 180
tcattcatttg ttttggtcac caccgaaggg gctctttaca gcgtccatga agccctgtgt 240
agcacccttc gccttgctcc ccgctgtgtg gaagaaagag ccagtttgtt ctttcccttc 300
ttgggctttt cccgtgatgg atcgaccc 328

```

<210> 234

<211> 157

<212> DNA

<213> Pinus taeda

<400> 234

```

ggtgcatcc tattatagaa ccatgactct tgcgatggg gcataaactt ctcattctta 60
ggcgtgccta ctgtgactct tgccgatgtg gcataaactg cttattctta gttgtgcctt 120
ctgtgcagaa cttgttgagt cggtggtata cactgac 157

```

<210> 235

<211> 334

<212> DNA

<213> Pinus taeda

<400> 235

```

ggtgcatcc attaactaga ttaacgataa cattcctctg catccaatcc aatgctcatc 60
taaacttact tctacttaga tctctgcctc atctttctcc acctcctcat ccattctgaa 120
atattaattt ctgcatagat tttgttaggg tctagtaatc attttcatga atttaaatct 180
gttctagtct cttattatta tgctgcttat gctagcatca gaacctgtgt ataattcatt 240
catgtatata ttggattaca caaattatac ggatgccaga aaaaaaaaaa aaaaaaaaaa 300
aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa aaaa 334

```

<210> 236
 <211> 199
 <212> DNA
 <213> Pinus taeda

<400> 236
 cttgaagctg atatgtttga acccgaaatt ttgttaccca actccagtggt acattgtgtc 60
 actgtcaaag agaacatgag agctgcatgc aagcttttgc atgatagata gattactgat 120
 caccgaacat ttcttactct actttcctct cctatcccca gtgatttttg ggcattttct 180
 atacccttcg gatcgacc 199

<210> 237
 <211> 220
 <212> DNA
 <213> Pinus taeda

<400> 237
 ctcataaaca gcaatatgat gcattcctct tatacacatt tcatatatgt tcacccttgc 60
 cgtcatggct actctaagaa gagcaaaaaca gaccattga atctttacac ggcgttgttt 120
 atatgaatac aaataattta ggcgtttctt tacacgcctt tgtttacatt aatacaagtg 180
 atttaggcgt tgttaccaga atagtgccac ggatcgacc 220

<210> 238
 <211> 555
 <212> DNA
 <213> Pinus taeda

<400> 238
 ggtgcatcc caagatagaa aagggaacta tggctctcgag gagggtcagg tgctacagat 60
 cacaatatac ataagggctt gatagtagta ctcgcccaa tgtttgaggg ctctaactaa 120
 ggaggatcaa ccgtaccctt agcgtataaa cccgactacc ctatcgtagg ggcgagtaat 180
 ctctctgagt gttgttctcg gtgtatcgta gcagcaacac ggctgacggt ttatctatgg 240
 tgaggtttca aaggagctag ggggcttcca atatacccag aggggtactg gaagacagtt 300
 tatacgcggt tctgtctaata gcgtactac tcgaaggggt acccacaggg gttacaagag 360
 agtgcacaaa gcatgaccac cccttgattt tcttgcattg atgcctccc aaatccgcag 420
 gtttatgcgc tcattgacag attccgtggt ttaaagatgc cggacatgt ctctagccaa 480
 aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa 540
 aaaaaaaaaa aaaaa 555

<210> 239
 <211> 419
 <212> DNA
 <213> Pinus taeda

<400> 239
 ggtgcatcc tcctaacctg caatgtcctt cctgcaacct gcaattattc aacagaaatt 60
 aggtttattt ttctttttgt cttttcttct tttttttttt tttttttttt tttttttttt 120
 ttttttaagt aaacgaccat ttcaaacgcc atttcaaagt ctatgaatta atgttgaatt 180
 aatgttagca ttaagtctta aacattttat gttaaggcat atatatcggt ccaactactc 240
 ttacaatata cctgcggtgt actcctgcca ccgcatgtac caccgttaca tgtacgcctg 300
 ccagcacatc taacaggtgc caactcctt gaactcatcg tcgccatttt tgtatgcata 360
 tttgaactca tcgtcgccat ttttggatc ttcacatatg gccagtccag gatcgacc 419

<210> 240
 <211> 129
 <212> DNA
 <213> Pinus taeda

<400> 240
 ggtgcatcc aaggagtggg cgtgcaatgc gtcgaagata gccaccactg caggggctg 60
 gcatgctgcc gtgcttccca cagggagatc aacacctgca cctccgcctc cttccgcgtt 120
 taccacgag 129

<210> 241
 <211> 349
 <212> DNA
 <213> Pinus taeda

<400> 241
 ggtgcatcc agccacagaa agattggttt actcgataat tgaacggtag actttgtgca 60
 ggttttagatt gtgtacatgc tgatcagtat tgtctacacc attttcaatc ttgttttagtt 120
 ctatggtaat ttatgtaaca aattcagcga tgttggggaa attggtcaca tcagctttgt 180
 gcctatatat ttcaagtaaa tcaggggatc cattaatact gcttttaaaa taattggggc 240
 aaagtgtgtg gatgactgct tcagcggaat acgtgctttt catagtgtg tatgacattt 300
 tgttgaatat gaattttctt tgtgatacag ttgcgcgaaa aaaaaaaaa 349

<210> 242
 <211> 316
 <212> DNA
 <213> Pinus taeda

<400> 242
 ggtgcatcc atgccaagag ggtgaccatc atgccaagag acattcagct cgtcgcgcgc 60
 atccgtggag agagggcata aacagtcagt cagatccaat ggtgtgtttt cacaccacca 120
 tatgtttctt ttactaaatt tgtaggtcc ctccgggtgg tcttttcttt ccccgattt 180
 tagtatattt ttgttcttct gagtttcac attgcaagta caagatgcag aattgatggt 240
 tattgggact tggagactgg ttattgctat gtagagtatt tatattagac aggtttcact 300
 tgaagatata aaattg 316

<210> 243
 <211> 188
 <212> DNA
 <213> Pinus taeda

<400> 243
 ggtgcatcc tcatgtgtta taaccgaagt ttgcgggatt cagatgggtca gtatcttaaa 60
 tgtccaactt tcggtacgaa tggggtgcgt tctgaaacgt gccacgaaag aggtgttcag 120
 gatctgtctg aggcattctt ccggtatttt ccacttccat ggtatgagaa actttcgtct 180
 tgttgagcag 188

<210> 244
 <211> 170
 <212> DNA
 <213> Pinus taeda

<400> 244
 aggagacaca actttacgaa aaagttcaat ctggagtctt ctaagttttt cagactctct 60

aaatatgaaa agcgccgagt ttctcctata ctggactcgt taaaatttta cagtaaagga 120
cctgttctat tacaacacagg aacggaccgc tcctccttag ggatcgacc 170

<210> 245

<211> 164

<212> DNA

<213> Pinus taeda

<400> 245

ggtgcatcc agcaagagaa cgaaaaagat atgaagaatc tatgaaatat ttgtacatca 60
ctgtattcat atgagggcct ttttttacia tgcggtaggg ttgtttggag aattagaacc 120
tgattaaaat gtagatggat tcaagctttt agtgaaatga ggct 164

<210> 246

<211> 187

<212> DNA

<213> Pinus taeda

<400> 246

ctcaacataa agtcatagca tagcaccaca ccacagtcgt catcatttgt tttgttcacc 60
accgaagggg ctctttacag cgtccttgaa gcctgtata gcacccttcg ccttgcccc 120
cgctgttgg aagaaagagc cagtttggtc tttccctctc tgggcttttc ccgtgatgga 180
tcgcacc 187

<210> 247

<211> 471

<212> DNA

<213> Pinus taeda

<400> 247

ggtgcatcc catgggatag ttgcaaaaaca cacaattttg ttgtgaaaga agagagacac 60
gcacagacaa ccatatgac tttttttttt tttttttttt tttttttttt tttttttttt 120
tcgggaccaa atatttttca atacaacgcc atgtgacatt tttgtgcttc ttgtttttga 180
tacatacatt ccaaaaactg aacactcgat ggatacggg atgatgcagc tacagccatt 240
gcattacaga tgttattaaa ttaaataaat ttattatgtc atcacaccaa cccaaacaat 300
agcgctatta tgtcattaga atgggtgcag ttacaagatc tgcaaacaga tcaatgaatc 360
atcatgcccc tctatatctc ttgtcaaaca tcaagataaa cctaatttta ggactggact 420
tcctcaatca tatcacaatg gcaaactcag cctcatgtcc tggatcgac c 471

<210> 248

<211> 265

<212> DNA

<213> Pinus taeda

<400> 248

ggtgcatcc tggactggcc atatgtgaag ataacaaaaa tggcgacgat gagttcaaatt 60
atgcatagaa taagcgttct gtaattggaa cggccatagg agttggcacc tgttagatgt 120
gctggcagge gtacatgtaa cgggtgtaca tgcggtggca ggagtacacc gcagggtgat 180
tgtaagagta gttggaacga tatatatgcc ttaacataaa atgtttaaga cttaatgcta 240
acattaattc aacattaatt catag 265

<210> 249

<211> 417

<212> DNA

<213> Pinus taeda

<400> 249

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ggtgcatcc catgggatag ttgcaaaaca cacaaatttg ttgtgaaaga agagagacac 60
gcacagacaa ccatatgatc tttttttttt tttttttttt tttttttttt tttttttttt 120
tttttttttt tttttttttt tttttgtttt tttttttttt tgaagtgaca aaatctaaac 180
caaagattaa aaggctttgg cttcagatac tatagaagaa tgagtctcaa agtggacagc 240
atacttgctg tccgagcctc atttcactaa aagcttgaat ccatctacat tttaatcagg 300
ttctaattct ccaaacaacc ctaccgcatt gtaaaaaaag gccctcatat gaatacagtg 360
atgtacaaat atttcataga ttctcatatc tttttcgttc tcttgctgga tcgcacc 417

```

<210> 250

<211> 167

<212> DNA

<213> Pinus taeda

<400> 250

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ggtgcatcc caaccaggtg tccatgcaat atatggtgag catcaagttt gaggtggttg 60
attgaaagtt acaaattggt gacatctgaa gtctcattca gttatgtttt tgtatataaa 120
aaccataacc aattttgtat ataagatcca taatcaattt tggccaa 167

```

<210> 251

<211> 236

<212> DNA

<213> Pinus taeda

<400> 251

```

gttttcaaga agagcctgac ggtttctctg gcgggatgac ggaaacagga agcggccggc 60
cggttccgga ccctccgcag gcggagcata gcattttgcc ggaaccaccg catgtcctgc 120
acccaacatc cgcgtctgac cagcggaggc acatgcaccc aaccctcccg gttccattgc 180
acctcgggca gcgcggccac ccgcgggcca tcggcttata catcatggat cgcacc 236

```

<210> 252

<211> 409

<212> DNA

<213> Pinus taeda

<400> 252

```

tgggcgaatc atatggcttg cattttcatt gtaacatgta tacgttaagg attatcataa 60
tgcttccaaa accttgatc ttctgctctg ccacaataca tccaggataa ctaatggaag 120
cttgacatgt cttcaccagt aataatatat caactataat acatgccatt cttttatcag 180
ttttgaacaa aataatcgat ttgcattctt gacaaagaac ctgcgcata aaaacaaata 240
aattctcata atgcctcca aaccttgtag tctgggacct cagtcgccac aatccattta 300
agaggaattt ggggggttgat agtgcccagg tccaatcttc atgaaaattc gttcatcaat 360
ctttgctgca tacacatctc tctctgcttt cactatctgg gatcgcacc 409

```

<210> 253

<211> 356

<212> DNA

<213> Pinus taeda

<400> 253

```

ccactataat gaacattgat attacaaata taatatacat taatattaca attcaaata 60

```

```

ttgacaatga gcaggcacta cttgcagtgc tttggaattc agacttctga tttgcaatta 120
attcttgtag acgcttttct gggagggcag gttttccgct tcagagaaaa ccacgtacaa 180
aacgatatta aataaaaaata gacacatata aaaaatactt cattttttgc tctttccatt 240
tggtttcttc ctctatctcc attttggagg gcttaaatga cttcaaattt aaaagtcaac 300
aacagagtgc agcacattct attagctttg ctgtaaatat ctgattggat cgcacc 356

```

<210> 254

<211> 375

<212> DNA

<213> Pinus taeda

<400> 254

```

ggtgcatcc gcattaagag aagcatataa gaaaaagaag tacctgcctc ttgatttgcg 60
tccaagaag actcgtgcta tcaggcgacg ccttaccaag catcaggcat cattgaagac 120
tgagagacag aaaaagaaaag agatgtattt tccaatgaga aagtatgcag ccaagggtga 180
aagcacagga ttgagcttt catgcaattt ttttgttact cgcgggatga tattgcctat 240
tatatttccg tccaagtttt tggcaaattc ctatttgcac cagaattcaa gttatgatag 300
gtgttctttc gtttttgagc agttgatatt gtttatcttt tatttctatt attaattctc 360
taagttggat cgcac 375

```

<210> 255

<211> 189

<212> DNA

<213> Pinus taeda

<400> 255

```

aaacagacaa atatagaaat atgcatacat aagtccctgc agaattgttt tccgcaatga 60
attctggttt atggcaacat tacctactta gtactaacc taagattatt ttcagctctg 120
ataagtggca tacgtgtatc aatcttgcac gagtctatcc ctgttttaac cttttgttgg 180
gatcgcacc 189

```

<210> 256

<211> 105

<212> DNA

<213> Pinus taeda

<400> 256

```

gtggaagctt cattgtaaaa cactactggg tttgagagaa caaaatatat acgctagccg 60
agtggattat aacaaaatat aggttttatt ctattggatc gcacc 105

```

<210> 257

<211> 348

<212> DNA

<213> Pinus taeda

<400> 257

```

ggtgcatcc catacattaa catagccatc acagccccc gtggcaaaaag taccatagct 60
gcaaaaacat tataaaacta acatttctac aaggaaataa aatacaacta aaaaagcaag 120
caataggcat taggggaggg agaagctaaa actattaagc aacttacatg ggatgaaagg 180
caattgcgtt tactggataa acagtatctc tgccagcctc tgacttgca tgacatttaa 240
aggcatattt tttaagcttg accagcttca gatacatcat aatactccat agccatgcga 300
gcttccacag aactaagggg caaaacctgt tccatttgga tcgcatca 348

```

<210> 258
 <211> 476
 <212> DNA
 <213> Pinus taeda

<400> 258
 ggtgcatcc aactgagaag ggtgtttggt ggaaagatga caccaagtgg gttctctatt 60
 ctccagagga tgcaagaaaa attctgagag caaagaagaa tggggactca aatattacgt 120
 tgggttctgt taaatctgcc aagtaccctt caggaaagct ttatgccata gacctgggtg 180
 ccatgaagca aaccaatgta aacactggct tctccagaga tatcaaaatc atcaattctt 240
 gccctactga tgatcaggaa gatgtagagt ctgatgaaga agatgaatta ttcacattct 300
 ctcgtcctgt caaagttgaa gtgattaacc agagcaggaa acctgataag attgtcaaga 360
 tggttccttc tgtcactgta gaccttgaga aattgacttc tcaatacctc ctggaggatg 420
 agtgcaattt ggttctaaag cttcccaggg ctgcagctgc ccaatcggat cgcacc 476

<210> 259
 <211> 317
 <212> DNA
 <213> Pinus taeda

<400> 259
 ggtgcatcc agctaataca acttaatgga gagcccttcc caggaagagt aaatggtagt 60
 cacttgaagc cctacacggg tgggctggcg gtctgactaa ctgacaaaaa catagtcttc 120
 ggcaccaac aagccagaca gaggtgtggg actataagca caagtactag aagctagcat 180
 caaagtagag aattaagtta gatacagatg attcagaagc agaaatggag cagatccaga 240
 ccacggtagc atggtgagtt acgaaccttc acgccacacc aacgcaattg gttaagactt 300
 cgcactagga tcgcacc 317

<210> 260
 <211> 283
 <212> DNA
 <213> Pinus taeda

<400> 260
 ggtgcatcca tagttccttt tgctaagcga ctactctatc tcttttgaca tttctccaaa 60
 tattgggtct ttcagttcct tcaaatagcta gaatcatatc aacatgggat ttagtgaggc 120
 cgcaatacta accagggcat taaaataata catttcattg atcctattcc caaaacattt 180
 cccgctatcg tacgttgact cagcatattt agagcaattc ttcttacaaa ccttaagaag 240
 gttgttcattg atagtctttc cgtctgcaat attggatcgc acc 283

<210> 261
 <211> 299
 <212> DNA
 <213> Pinus taeda

<400> 261
 ggtgcatcc caccgaagag ttaaattcac ttctccgctt ttctgaggaa gagcactctt 60
 tggatgatat gaaaagtggg ccactcttaa aaaccgtatt cggaaccctg ttccgaggac 120
 ggtcgtatgg cgtaaccggc gcagacattt tatctcctca cacaatatca acattcaagt 180
 ccccgctgtt ccccgttgcc tttctctgct cccgaccgtt aaacaagaac gaccacaaga 240
 atgaacaaca ccgcaaccga aacctgacct tccagttgt cttcggttcg gatcgcacc 299

<210> 262
 <211> 352

<212> DNA
<213> Pinus taeda

<400> 262
gcggacgcct ggcaaaaaca gagggatatgc tcaagcctta cagaaattga aaaataagag 60
aacgtatgac catcaatctc aatctcaaga aaagaagttg caatacgact ccaacacttt 120
tgaaagttgg aggtttgctc tttctagcgt tgcagacatg gttgggtttg agctggaagc 180
gtgtaacggg cactttacag ttgcgggaat tggagattga ggacccctc tcaaacgctc 240
atagggaggc taagcatcta tagaggattg tgattggtcc tttccgcta catggaaaga 300
aagtcaaact cagaaaatta ccagaagaat tctgtcgtct tctcgagcc gt 352

<210> 263
<211> 221
<212> DNA
<213> Pinus taeda

<400> 263
gacgttgtaa aacgacggcc agtgtaaaga gcagccccga tgcgccgaag ctgcgcaggg 60
aaaagctgca gaagatggga ccgatgacca agaattgagat catcatgagc ggcacgctac 120
tggtcacggt gggctcttgg atatttgggg gaatgctgaa cgtggatgct gttactgcag 180
cgatccttgg tttgtctgtc ctactctgca caggcgtccg c 221

<210> 264
<211> 365
<212> DNA
<213> Pinus taeda

<400> 264
tacggctgcg agaagacgac agaagcagaa cctgcccaata taggatcaat tgaatgttgt 60
gggattgctg catgccacc tttcccagtt attactgcct tgaagaacct acagccagcg 120
agtaagggcc cgggtttcga accaatcaca gatgtaggat aatcgcttga aacatgcata 180
gcgaatatgc cttccacatt ttccagtgct cctcctcta tcattctttt tgatcctgca 240
cctgattcct ctgcaggctg gaagagtaat atgacagttc cctgtaacaa atgctgacgt 300
tggtgcaaaa tctttgcacc accaagaagc atggtaacat gtgcatcatg tccacaggcg 360
tccgc 365

<210> 265
<211> 491
<212> DNA
<213> Pinus taeda

<400> 265
tacggctgcg agaagacgac agaaaagagg caaacccgagc tcgacacctc cactcagagc 60
atttgcaaaa atccacaaca aatctggagc caaggtcttt cctcattga aaacatttat 120
cggacacatc aatgtctgta gtctttccca tgggtccatcc agagtaatca cgggaagaac 180
aatgcacttc agttcagaat ttttgatgac agctatcagc tcctgatect ttgaaccagg 240
tatataataa tcttgacctg actcctgttt caacagtgtg gaggttctgt caacctcaag 300
caatgaatcg gcagaacttc catttgctgt tttgtcaata caggcattgt ttttaccag 360
actgtgacgc atcttctgtc cttgtctata cagtgcagtt tggtcaagca tagacttatg 420
tgctagaaca tgtcttcctt ttaaattgta agagaaatgt aggggttgac tgcttttact 480
gaggcgtccg c 491

<210> 266
<211> 485

<212> DNA
<213> Pinus taeda

<400> 266

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acggctgcag aagacgacag aaccctggct gactacaaca ttcaaaagga gtctaccctg 60
catctggtgc tccgtctaag aggaggcatg cagatttttg ttaaaaccct tacaggcaaa 120
acaattactc tggaagtggg aagctcggac actattgaca atgtaaaagc taagatccag 180
gacaaggagg gaatcccacc tgaccagcag aggttgatct ttgccggaaa gcagctagaa 240
gatggtcgta ctctggccga ttacaacatt cagaaggagt cgacccttca cctggtgctc 300
cgtctccgtg gtggctttta ggttggtgtg tgtgtgtcaa tgtagtctgg tgatgttcag 360
tggttttcct gcttaatcct ttttatgtat gcatgtgttt gttgtgtttg tgttttgtct 420
ctatgttttt tctacttggg ttgtcggtcg gttgaagccc ggctggtgtc ctggtaggcg 480
tccgc
```

485

<210> 267
<211> 494
<212> DNA
<213> Pinus taeda

<400> 267

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gcgagcgct ggacaaacac agaaggcgaa gtaaaagcca gtcttacttt tcatgtaaat 60
actatcaaac tgcattggccg ttccgctggt tggcaatacc acacctgcgc cggtagtgcc 120
aatgaacact gcaccggcag ctctttcaga agttgcagag gacttaccat tttatttttc 180
acggcatccc gtcaaacggc gggatgcttt taatttttta atcaaaaaaa atattaatta 240
tggcacacaa tattgttttc aacgaacaga caggcaaaaca cagtttcttt agtgtaaaag 300
aaaaagcatg gcatggtttg gggcaaattg tacaggacta tccaacagt aaagaagcat 360
tgcaatttgc agggcttgat tttgaagttt gcaaaaggcc caatattcac aggcttgata 420
atggtaatga gattatttct accagttcat tctatactta ccgtcctgat accaacgcca 480
tattaggcgt ccgc
```

494

<210> 268
<211> 469
<212> DNA
<213> Pinus taeda

<400> 268

```
gcgagcgct gaacatagga gcattcttaa gcatatcagg tataaccata aacctgactt 60
tgctgccccg aataaagaca tgctccaatt gggatacttt tccatccttg gcagtgtaa 120
tgatgccctc gagctggcaa ttccagttat ctctgcattc gatcatgcta cccctgtaca 180
gctcgccact tttgagttca actgtcacia catgcccggc tgcttcatgg agcaacttca 240
caggaatccc caaacttctg ctcatTTTTT tgtactgtc caaaaaccct aaaccccaga 300
taaaaccctc ggttctgtgc cttttatccc cgggtggctt attgttgcag tagttggcaa 360
cggctagact tactcacatt ttgatttcaa tctttctaag tttgcccttt tgggttttcc 420
tcacagtaga tctattttta tgtattttct cgtcttctcg gcagccgta
```

469

<210> 269
<211> 345
<212> DNA
<213> Pinus taeda

<400> 269

```
gcgagcgct gcaggaatcg gccgatttgc agttcgaggc ataagcgcat cgaggctcg 60
ttcgatgtag caattaagcg gccatgaacc gccgctaagc aagccagtc caatcaaagc 120
acatgcaaag cggatgcaat caaatcttcc gttgtaagca agcaciaaat caactgcaca 180
tgagatcacc accatgaatg caattcgagt gcgagctaaa tcccaaaacg ctgcgagtgt 240
```

ccccgaagg cgattcgat gtaatatattg accgctgctc aacacaagca gtactccaaa 300
caccagtgtc tccgccgtca attctgtcgt cttctcgcag ccgta 345

<210> 270

<211> 342

<212> DNA

<213> Pinus taeda

<400> 270

ctgcgagaag acgacagaac acagacacaa aatttggaaa ctacagaaaa gaccatgtca 60
tgaaatcttc ataattgggc ttcagatgca gagggggctg gttttggatt aagcaatggc 120
tgaagtgtt tgacaacaat actcatgtta ggacgaaaat ctgcttcata ctgcacacac 180
aatgccgcaa cagcagccat ctttgcaaca gcctttggag gatattcact cttcaacttg 240
ggatcaacac actgctttac tttgtcttca ctcaatcttg gagttgcca agtaacaagg 300
ctttgttgtc ccctaggcat tgtatggtcc acaggcgtcc gc 342

<210> 271

<211> 313

<212> DNA

<213> Pinus taeda

<400> 271

tacggctgcg agaagacgac agaaagagac aggcttggac ttcgtggcct tcttccacca 60
cgcattatctt cttttcagca gcaatgtgat cgtttcatgg tttcttttag atccctggag 120
cataacactc gagatggctc agctgactta acagctctgg caaaatggcg tattcttaac 180
agattgcacg acagaaatga aacactatac tacaaggctc ttatagatca cattgaagag 240
tttgtctcaa taatctacac tccaactgta ggattgggtt gtcagaatta tgggtgggctg 300
ttcaggcgctc cgc 313

<210> 272

<211> 277

<212> DNA

<213> Pinus taeda

<400> 272

gcggaagcct caatagttat ggaagggcag ctgcactact tcagcatgag tggaggccta 60
aaagttttgt taatctttct ggtgaggtgg acaccaaagc ccttcacaac agtgcaaagg 120
tggggctatc tctggttttg aagccttgaa ggatatgcac tatttggtac agatttaagc 180
gaaggtctgt gccaaatctt tattggaatt tttgagttt tcctttcaga ataattatct 240
caatgcctgt gttttctgtc gtcttctcgc agccgta 277

<210> 273

<211> 278

<212> DNA

<213> Pinus taeda

<400> 273

gcggaagcct tttgcccatt taacatccct gcattctgcgc attaaaaatt gattgcagac 60
ctgaggttta agtggaagct tcttccacca tctctccctt gtttaaggaa gacccgaaac 120
cctagccact gtctcctctg tgacttaaaa ttccagttca ccaaccttaa ctctgcgtcc 180
gttaaaatct tgggcaaact gcactgcaa ttggcatca tatcctctga atttggcaaa 240
gaaaacatag gtcattctgt cgtcttctcg cagccgta 278

<210> 274
 <211> 180
 <212> DNA
 <213> Pinus taeda

<400> 274
 gcggacgcct cgtcaatcca tgggtgtaaa catgccttca aaactgtttc cttatgtcgc 60
 acaatgtcta catgttcctt gagcgatttt tcctgctgca ttgcgagcct ctgtgtaagt 120
 ccactatct gcgctgtccc ttttacttca taatacttct gtcgtcttct cgcagccgta 180

<210> 275
 <211> 446
 <212> DNA
 <213> Pinus taeda

<400> 275
 tacggctgcg agaagacgac agaaaaaact gtatacgagt aggcagcgag tcctggcagt 60
 atgggagatt gaactccaat tacatttagt tacaagtagc atcaacagtg actgagccaa 120
 gagctctaca cagaaaaata aaataaaaac tgtatatatt tacaggagaa accccaatgg 180
 cctcagggcc tgaataaatc aatcgacgag gtggctcgat tggccttttc agggctgcaa 240
 atcttgcaag ggggaagccat catccttggt ccgtatcctt tttgagggat agcgagccac 300
 gcagccaaga tttgaagcga ttgaatactt tgggggtgtcg agaacgcacc agaacaatgc 360
 cactcgagaa atactactgt gattactgtg acaaacaatt ccaggatact ccctccgcta 420
 gaaagcgaca tctacaaggc gtccgc 446

<210> 276
 <211> 425
 <212> DNA
 <213> Pinus taeda

<400> 276
 gcggacgcct gtaccgtatt ggaattctaa acccttcctt ggtatagggt tttcgccacc 60
 cttgcgttca tttggttttg tattacgtcc gattcctcgc tctgcgagct ctctgcaact 120
 tggcaatttc attgtgattt taccctatga tgcttcgtat ttgtttgaag ctctgcctcc 180
 tagttctctg tgataccagt tggtagtctg caagtctcga tgtgggttct tttagctggg 240
 ctggggtttt gttgctctga gtatgttgag ctgcatgctc gtggcggtct tcacggctcc 300
 atttgttcgg aatctgttgt ggaagtgtct cggcatctg tggaaactgtg gaaacctggg 360
 aagatttggt tatctgcttg tgtctaaact gttcttgagt tttctgtcgt cttctcgag 420
 ccgta 425

<210> 277
 <211> 295
 <212> DNA
 <213> Pinus taeda

<400> 277
 gcggacgcct gctgttgaag aaggatgaag tcattgtctg cggccctggt cagcatgatt 60
 tcggcattct taatctggtc aaccagtcag aaggtggcgc tgaaggtgac gaagaggcaa 120
 cctgggtagc tgcactggaa actcaagctg caaggggcac cgaccctcag acttcgcgcg 180
 attaaactct cctctggct aagtcgatgc caaggtcctt gttctgggtt cttctctctg 240
 tttcgcatgt tgttcttctc tctgtttcat ttgtttttct tctgtcgtct ctgcg 295

<210> 278
 <211> 196

<212> DNA

<213> Pinus taeda

<400> 278

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gcggaagcct gcacatacaa agaacgacaa aaacaaaagc ataaaatcca atagatgcaa 60
ctatatatca agtcagaaat gatataactc atcattatta caaagaacaa taagagtggg 120
accataataa tagtcgtcta ttattgataa ataaagaaga atacaacccat agttctgtcg 180
tcttctcgca gccgta 196

```

<210> 279

<211> 172

<212> DNA

<213> Pinus taeda

<400> 279

```

gcggaagcct gtataacatg caccaagaga cccaatcaaa gcacatgcaa tctgtatata 60
tagcagaata acagccaggg attgcactct atcgtaatcg cgaaaccacg cactaatatg 120
tgcccatgct gatgatgcac acagcatgtt ctgtcgtctt ctgcagccg ta 172

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<210> 280

<211> 405

<212> DNA

<213> Pinus taeda

<400> 280

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gcggaagcct gaactgtata gagttgaaac ttgaggaag gcttgctgcc accaaagcct 60
ccctctctct tcttggcggt ttgcgcacct ctttctcggt cagagcccca attcccctcc 120
tgcgacacacc agcaaaactgc atcgaaatgtt ttttccacca ttctgtaaat tccctcggag 180
ttaccttggg gcagaagccg cattgaagag cattgaatgc tattcattat cccaccgtaa 240
actaccattg caacctgcct gtgtatcgac ccgctgtcct ctacgcgtgg ctggcacatg 300
gcgtcggttaa ttgcatgttg acaccgctat ccgggtgtgc ttgtgtgctc gtctgcatat 360
catgttttag gatctcatag aaggtggacc attctgtcgt cttct 405

```

<210> 281

<211> 412

<212> DNA

<213> Pinus taeda

<400> 281

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gcggaagcct cttacaatgt ctcttaaaga ttggaaagat tgtcttgtct gcaaccataa 60
cttcgcgtg ctttcttatt aatgcaaccc actgtgatcc tttccgcat ttatcctttc 120
gaatgggttg agccattttt ggggtgtacc gactagcttt tgggtctaca aagctgtcta 180
caaaactctt tggagatgac attacataat catatgtata gctgaagttg taaaaaggta 240
cacaactatc tgaaaccaa atgaatctct cgttagctgg atcctcgagt gctttcctaa 300
gtagaatacg ctccgcttct atcatactgg cttctcccca aagtaacctg atgctatcac 360
taagctgcc ggcgtaacaa aatgtacatt ctgtcgtctt ctgcagccg ta 412

```

<210> 282

<211> 345

<212> DNA

<213> Pinus taeda

<400> 282

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gcggaagcct tgctaggaga gctctacgcc attatttgaa cgattgagcc gaagtttcac 60

```

cgtttaaggc atttgtgtcc cagaggttat tggagattag cagcttggat ttggctgctt 120
 cgctcagcgc cgtgattcag cttttgattg attctctcca gtttcataac ctgtaacgac 180
 aatggcaatg aagacctaca catttgacgt ggcagctgcg tacgctgtag tcttgatggt 240
 cgctctcttt ggcacgcgaa aggctgctga tgcaccgtct cccagccccg ttactggcgc 300
 gggttccatg gacttcgttc cttctgtcgt cttctcgcag ccgta 345

<210> 283

<211> 218

<212> DNA

<213> Pinus taeda

<400> 283

gcggacgcct tatcagctgg gggcattcat aggtatggaa attcagatca acttcagtgg 60
 acagtatgtg gatttaggcg acctgtgaca gttcacgata tctattcatt tctatccaga 120
 gacagattcc catactcacc tccgtccttc ccatatattt tctggaaggc atcatgtcct 180
 cccaaattta ctcattttgc ctggccgctg ttttacia 218

<210> 284

<211> 219

<212> DNA

<213> Pinus taeda

<400> 284

gcggacgcct gttgccacag aagaatgaat aatgcttcaa attttgagac ctcttcggag 60
 gaaaatcctt gttcttactg cctaaccact catgatgac tgcgtcacgc tgattatgag 120
 ctgcaattta aattatttca gatgaaacat tcccatattg agcttgacga caagtgcag 180
 acccttcaat ttcagttctg tcgtcttctc gcagccgta 219

<210> 285

<211> 60

<212> DNA

<213> Pinus taeda

<400> 285

gacgttgtaa aacgacggcc aggattaagg ttcatgagct ccgcaacaag agcaaatacg 60

<210> 286

<211> 732

<212> DNA

<213> Pinus taeda

<400> 286

gcggacgcct ctaggagccg gcggaattcc tgtgagctcg aatttgccga gcagggttatt 60
 gtccttcgtc cgcgctcgt cacttcata tacttgaatt agaaccacag gctgattatc 120
 tgagtaagtt gagaaaatct gctccttctt ggttggaatg gtggtgttcc tcggtattaa 180
 tactgtcatt acacctcccg ctgtctccaa cccagactt aatggcgtga catctagcaa 240
 cagcaggctc tgcaccttct cgttgccctc gccgctgaga atggcagcct gcacagctgc 300
 accatatgcc acggcttcgt ctgggttaat gctcttacia agctctttgc cattgaagaa 360
 atctttggagc aattgttgta ctttggggat acgagtcgaa ccccgacca agacgacatc 420
 atctatttgg ctcttgtcca tcttagcatc ttcgcataca tttctccaca ggctccatac 480
 ttctcctgaa aagatccatg ttgagttcct cgaagcgagc tcgcgtaatt gtggcgtaaa 540
 aatcaattcc ttcatataga gaatcaatct caatcgttgt ctgtgtagta gaagacagcg 600
 ttctttttgc cctctcacat gctgttctca gcctgcgaag agctctggca ttcccgtgta 660
 tgtcttttct gtgctttctt ttgaattcct gcacaaagtg attcaccatt ctgtcgtctt 720

ctcgcagccg ta

732

<210> 287
 <211> 100
 <212> DNA
 <213> Pinus taeda

<400> 287
 tagccatcgc catttctata atcttaggat ccttgcgtgaa cgataagccc ataaaattga 60
 tgcactgcct cgctatccct ggccgctcgtt ttacaacgtc 100

<210> 288
 <211> 347
 <212> DNA
 <213> Pinus taeda

<400> 288
 gacgttgtaa aacgacggcc aggaaattac agctacctct aactgggttg acggcggtgc 60
 atcttatgag ccgcaagggt tcgaatcctc tgcgggccag atctgcgatg gaaccctggg 120
 cgagtgaat gatgatgaag aagagtttgc gatggattct gaagcgacac ggaggcttct 180
 gaggaggatc cgttactata tcagctacgg agcattggct gctaatacgcg ttccttgccg 240
 acctcggctc gggaggtcct attacactcg gaattgttac ggcgcaacag gccccgtcag 300
 accttaccac agaagctgca ctgctatcac tcgttgacagg cgtccgc 347

<210> 289
 <211> 106
 <212> DNA
 <213> Pinus taeda

<400> 289
 gcggacgcct gggaagcaat ggatgggtgg ctagacgcc a tccgtcttgt gtatactatt 60
 tttgcacgcg gaaagagtga tgccttgcc gtcgttttac aacgtc 106

<210> 290
 <211> 307
 <212> DNA
 <213> Pinus taeda

<400> 290
 gacgttgtaa aacgacggcc agattcaaaa gaaaaaatcc tcaacttcttg gctccggttg 60
 cgctcccgcc gaagctcctc tgcaaccctc ctgcagcgta cactgcatcc cgctcgcggt 120
 gctggctcac ctcgcaggtc cgctgacggg aaatggtttc caataaagct attgtcctc 180
 taccctaaaat ccatctagca ttcgttgtgg attgacattc tgccatttct ctgcttttct 240
 gggtgatatg caaagattga aagcccaatt gcaagcagtg gtcgtggatt cactataagg 300
 cgtccgc 307

<210> 291
 <211> 286
 <212> DNA
 <213> Pinus taeda

<400> 291
 gacgttgtaa aacgacggcc aggaataaaa caaagcatca ctgcaaaatt tcaaacgtgg 60

taataacggc tagccagctc gacgtgaagg cagtgggggc cttgaggttg ccttttggcg 120
 ttcaaaattg gctagactac cataacataa atattgattt ctcagtgaca tcactgggtt 180
 ggagtcaccc acagcctgtg caccagtacg gcaattgcct tttacatgaa gccatccttt 240
 cacttttact tttgagattc tcagaactga ggggctaggc gtccgc 286

<210> 292

<211> 290

<212> DNA

<213> Pinus taeda

<400> 292

gacgttgtaa aacgacggcc agcaccttcc tagtcccctg ttccattctc ctgaaatagg 60
 agcagtttga cccagtccag ttttcagaat tgagaatatg aaacaaagaa cctaagcata 120
 tgagagaaca tacaaagact ttgtataaac tacttttcac aggatctcaa cagccctctg 180
 ctgagatcca tttgatacaa ggccccttgc atctccaccc tctcccttat cacctccact 240
 agaaagatga tggaaagcag acacatggaa atgttgctgc aggcgtccgc 290

<210> 293

<211> 497

<212> DNA

<213> Pinus taeda

<400> 293

gacgttgtaa aacgacggcc agttaggttg tatattgatt gatgactctt tgactccatt 60
 tatgaaaaca tctttgttct cgagatttaa tcagtattaa gctttcagag tgaagttcag 120
 tttgatctgc ataaacctga tccaccatat ctacatcaca tctaaaatta ctaaaatgtg 180
 aggagatgga atttgtttct tgagaatccc tattcctcat cgacactgtt tactggatca 240
 gatccaatca aactcttgag aagtaatctc tggaaagaaa ttaaaaagtc tttacctgaa 300
 ttatctcgat atcagaagca gaaattatga tacatagact tcttaataat gaagagtcac 360
 tttgccaacg ttgtctttgc caccaccacca atccccatga tcccaaagat ctgaggtttc 420
 catctctatg tggctgtgat aacactggat ttttcaaaaa tcttctactt tcgcatccaa 480
 acctttttgg gatattt 497

<210> 294

<211> 238

<212> DNA

<213> Pinus taeda

<400> 294

gacgttgtaa aacgacggcc aggggggatgg gagatacaga aagattccgg ataaaaggga 60
 gcaatgaacg gctgggttaa gcgtagtcca ccacactagc cccacctcca tgaggcctac 120
 acgtgaagaa gcaggattct ggggaagcgc agaggccgtt caagattatc agctcatgtg 180
 attcgcccaa ctgcaaaaaga tgtctaccgt aggctgtgat ggggcccagg gcgtccgc 238

<210> 295

<211> 311

<212> DNA

<213> Pinus taeda

<400> 295

gcggacgcct atcagatggg tgagttgacc gacatttata gtccgataaa tgtttgaggc 60
 tgatgtcatg gcaatccacg tgtctgcacc atatttcacg ggagcccctc gtcggaatat 120
 tccatcgccg gagagctggc gcgataggtt tcaggcggcc ggtttctggt ttgcagctgt 180
 ggcttccccg gcgccttaac tgttggcccc cgcgcacagg ggaaattaca aatttcaaca 240

tatccaatac catcatataa cccaacaaca ctagcaacag atcctgttct gtgccatcgt 300
ccaactcttg a 311

<210> 296
<211> 202
<212> DNA
<213> Pinus taeda

<400> 296
gcggaagcct taattcgact acaaagatac tgaagccaat gatgacaggt tgtgccactt 60
tcccagctga taaagacagc tctgaaattg atagagccag aactccagct gcaatgctcc 120
ccagagcctg gttgaagcgc ttgctaaagg tggcacttta tagaccgacc caaacctcc 180
ctggccgctg ttttacaacg tc 202

<210> 297
<211> 507
<212> DNA
<213> Pinus taeda

<400> 297
gcggaagcct actggaaacc cgggtccaccg aaggctgaaa ttgtcctgct ttgtataccg 60
aatggcagga aggttgctga gcatcagggt cacttggtta agattatcga tccatgctt 120
caataccttc agctgctctg cccaaggac agtagtattg cacaggtaaa tttcagattc 180
attgacattc atccggaagc gatatggtga gttctcgatc ctgtcccca tgaggagctc 240
cccaagattt tctgccatgt ccttcacacc atccaagggc ttgcagaagg gcaggctgta 300
atagctgtag ggaagctctg tctcgactga ggtaagggaa ttgacgttca cccataaatc 360
tgacccttg gagaatatga tgtgaggaat acagtgccta gtaaatataa ctccgcatta 420
tacgtttgtg tgtgccttcc ccaatattgc cccaacataa tcaaaacca caatcccaaa 480
tctggaccg tcgtttttac aactgtc 507

<210> 298
<211> 522
<212> DNA
<213> Pinus taeda

<400> 298
gcggaagcct tgtcaggacc aaatgtgtaa gaaacacctc tgtcattoga gccccatcct 60
tgaattgcat tgcaggggtc tgaccaaaaga agatcacata acaacctgt atctggcaca 120
tctgtaggtc gaggtatatt ctttatttgt tccaaattgg tcagttcagg cgaaagacca 180
ccatgcatgc ataggatctt ttcattctata agtgcagcaa caggcaggca gttgaaacag 240
tctgtaaaaa gtttccatag tcttacattg aatctgcgtc tgcactcatc atagaaacca 300
tatatgcat ttattgaggc acattcatga tttccctca gaaggaaaaa gttctctggg 360
tatttaattt tgtaagcaag gaggaggcat attgtctcta ggctttggtt gcccgggtcc 420
acataatctc ccaagaaata agtaatttga ttctggtggg aagccaccat attcaaaaag 480
ccttagacag atcagaatac cggcctgtcg ttttacaacg tc 522

<210> 299
<211> 410
<212> DNA
<213> Pinus taeda

<400> 299
gacgttgtaa aacgacggcc aggagacggg aatacctatt tttgggagga ttattgggct 60
cggaatcag catattgatg tggctgcaac tcgcatctc gatctttggt ggttcttcgg 120

```

cgatttacac atttgagatc tacttcggtc tgctagtttt ccttggggtat attatatttg 180
acacacagat gatcatcgag aaagcggacc atggagacta tgattattta aaacattcac 240
tggaacctctt tattgacttc gttgctgtat ttgttcgcct gatggtcata atggcaaaga 300
atgcagacag taaatccagg gaagggaaaa agaagagaag ggcttgaact atgtgagata 360
caaaaatatc gagaatagaa gggcttgaac tagggcttga aagcgtccgc 410

```

<210> 300

<211> 237

<212> DNA

<213> Pinus taeda

<400> 300

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gcggacgcct atcagacaag ggttggtgac cgaactttat cctctgaaaa gtgcttgaag 60
ctgatgtcat ggcaatccac gtgtctgcac catatttcat cggagcccct cacacggaaa 120
caaccttaag ccaaaagggtg gtgcgatgac ttaccggccg tttatgggtt gcttcgggtg 180
ttttctgttg ggtgggtttcc cgcgcgcgtt aactgctggc cgtcgtttta caacgtc 237

```

<210> 301

<211> 625

<212> DNA

<213> Pinus taeda

<400> 301

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gacgttgtaa aacgacggcc aagaggggga aactcccaaa acacttttcc atttttcttc 60
ttttattaaa cttcaaagta ttttccaaca gagttacaag gggccaacca tgtccaaatc 120
catgcattta ccaagtacaa agaatggtag tccttggtt gacctatcgc actagccaaa 180
agtgccaaagt ccacaactag ggtgtgccca acctaaagggt gacaccttgc ctagaaaaaa 240
ccccaaactt ggcaccacaa ataacacaga aacacaactc ttgacctctg ccagaaacca 300
ggctctcttg ggaaagccac acctctctct gtgatatgtc ttatctccaa tttccctttt 360
tgtgatgcac tcccttgctt gtggttctgc gatatcacac aaacttacat ttctgcgatt 420
tttgtttctt gcttctccaa atcatgcat cttattttta acccttgaga cccttcacac 480
tttccatcca tgacgtcact tcatcgtttt agccaattcg tcatttgggc atgttgggcg 540
ttgggtctac ccttattccg gtcgtacagg ccaatttgac cattttgggc caggtgggtg 600
cacccattcc tggagggcgt tcggc 625

```

<210> 302

<211> 629

<212> DNA

<213> Pinus taeda

<400> 302

```

gcggacgcct ccacagagct cacacatata atatactatg atgcctccag aactatggca 60
ctctgtatgc cgcttcaata tggattagcc cacactgcgc catccaatta ggcaatcaa 120
ccttatagca ccatccacaa cctccagcgc tctctttttc acgctagatt ggccaactac 180
aggctttaca aactactca tatacaactc aactcggctc ctctgctcac cactaaatca 240
cacaggctcc aatcgctaga cagagccact acacaggcac taatagccac tacacaggca 300
ctaactcttg cgctctccac caggttccaa caacaacccc aaattgcata tgcactccac 360
agtgagcacc aactaggtcc acacaatagg ccacaccaac aacactccaa ggaccctaga 420
tcctgcctca cccagacacc actaggcctt cctcacagct cacctaagtg agccaacaac 480
tggtctggga cacagctccc aactatatga gcacacagcc caactacagc tccaccacac 540
gcacagctac acgcacaatg ccttctcaag ttcacagcca caccataacg cagcacagtt 600
cttacaacaa tatctctcca ggcgtccgc 629

```

<210> 303

<211> 324
 <212> DNA
 <213> Pinus taeda

<400> 303

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gacgttgtaa aacgacggcc aggataatgg acacgagaaa cctttggatg tgcctctaaa 60
gtgcgggcaa tccttaaagc tgttgaattt tgttgctgta cacgaagggtg cagggtcttt 120
atgccacgaa gaatcaagta cgctgcattt ggacttaata cacctcccaa gacattgtgc 180
aaagcacgta ctgtgccaat aaccttgttt gaaccactca aactgcctgc aagaacatca 240
ttatgacctg caatatattt agttaccgaa tgcaatacaa tatctgcgcc gagtgtctaac 300
gctttctggt taacaggcgt ccgc 324
```

<210> 304
 <211> 331
 <212> DNA
 <213> Pinus taeda

<400> 304

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gacgttgtaa aacgacggcc agtcattatt gacaataatc ctttcagctt tttactgcaa 60
cctttaaacg gtataccttg cgtttctttc actggagcac actcagatga taatcagctt 120
ttacagggtgc tcttacctct gttgaagcat cttgccactc aggaggacgt gcgacctgtg 180
ttgtatgaaa gattttacat gcccgcattg tttgaaaagc gtggcattcc agcatctgag 240
tgcccttgt gacttggttt tgattttgga tactctttgt cattttgggt caaggtaaag 300
gtgtacgtat ccaagtgatg caagcgccg c 331
```

<210> 305
 <211> 286
 <212> DNA
 <213> Pinus taeda

<400> 305

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gcggacgcct gatagcacga gtcttcttgg gacgcaaatc aagaggcagg tacttctttt 60
tcttgatgac ttctcttaat gcggatcgct ggctctgaga aatcacagtc agaacctgag 120
ctattgatag cctcacgacc ttgatttttag agagtttggt gggcgctcct ccagtgcct 180
ttgcaactct gagcaaggca agctcagcct tgagctcctt gacctggctt aacagctcgg 240
atttgccctt gtggcggact caaggacctt taacctgggc gttcgt 286
```

<210> 306
 <211> 271
 <212> DNA
 <213> Pinus taeda

<400> 306

```
gcggacgcct ggtgtcgctg ggccagttca agtatttttag caacagtgtt cacacttatt 60
ccctgtgata ttcttgactc acacaaccac cttaactgac gcagaccata tcgatctgct 120
gctgtaagca aatgttcgat cattgtctca ggtgtcaaaa agcaagggga tggatcagaa 180
agctcttcta aatctgcatg ctcctctaaa tctggaaggg tatctttgta aataaagtgt 240
aacatagcct taaacacctc tggcgcgtgt t 271
```

<210> 307
 <211> 283
 <212> DNA
 <213> Pinus taeda

<400> 307
gacgttgtaa aacgacggcc agaggtgttt aaggctatgt tacactttat ttacaaagat 60
acccttccag atttaaagga gcatgcaaatt ttaagaaaaa ctttcctgat tcaaccccct 120
gccttttggc accctgaaga tggttcaaca atttgctaac ggaaccaatt caaaagggcc 180
gcctccattt aaggtgttgt gttagtccag aatatcaca ggaataagt ttaacaccgg 240
tgccaaaata cctgaactgg accaacgaca ccaagcgttc gcc 283

<210> 308
<211> 259
<212> DNA
<213> Pinus taeda

<400> 308
gcggacgcct tgtaatccag ggcttgaat attgtaagag aagatcgaga aataatagtt 60
ttcttattat caggaatcac agcttgaaga aggcagacca tggactccca ctggcttcgt 120
gatattgagt cccaacaaa cattagtcgt ttccccctca atctccacag caagtctctg 180
gcattgaatc tgcgaaagga acacccgagt ggcttccacc tccattttctc gtaatcagaa 240
tctggccgctc gttaacaa 259

<210> 309
<211> 237
<212> DNA
<213> Pinus taeda

<400> 309
gacgttgtaa aacgacggcc agcagaagac cagtgcagta tgctgcagca tagtttgtaa 60
gccctacttc gattccataa cgaggcaact ccctagaata agcagccgac ataacaacat 120
ctcccgaag agttgcataa atgatctgtg ccaccacatc cttgttgctg aatctaacga 180
ccaatcggtt tttgggtgtg ttgtacttgt tcttatcttg gttaatcagg cgccgc 237

<210> 310
<211> 417
<212> DNA
<213> Pinus taeda

<400> 310
gacgttgtaa aacgacggcc agcatccatt gcagaaatth tgggggctat atttagcaac 60
agatatcaca gctgtaagtt caaagttgga cccttcttct tcgacatctt tccagctgt 120
gcaataaact gaacactgtc cttttggata agcttctctca acatatttag aaagttcaac 180
atccaagaca ttgcggtact cctcaacata tatggatgca agttcatcat ctgcagctgg 240
tctcaccgct gtacaaactt gttaacatg gttgacagtt gcaacttgag cagtcctgg 300
atccaaataa tgagttccgt caagctcact gaactcagtc acaatcacct ggccactttg 360
attgggcattc tcgagggata tcatgtgaga cttgttggtg atggggaaag cgtccgc 417

<210> 311
<211> 308
<212> DNA
<213> Pinus taeda

<400> 311
gcggacgcct gcataaacat cgctaccctg gggatgatta ataatagtag cagggttagg 60
atcttcttca tcttgagcga tatcatcata cataaagacc acaatgtttt cctctttcaa 120
accgcctttc ctcagaatth ggtaggcatg gcagatatca gcctgatgcc tgtagttcca 180
ataaccggaa gaaccagcca acagaatagc ccactgagta ccgatcgtat cactatcatt 240

aacgatatga tcggtgggca ttttcagtag tgaatcccaa ccccttctgg ccgtcggttt 300
acaacgtc 308

<210> 312
<211> 183
<212> DNA
<213> Pinus taeda

<400> 312
gcggaagcct agactgggca taccaactac cttcctcatg ccaggccatg ggccacctac 60
ctggtactta ggcataaacac cttacttacg agcatgccag gctcagtcag ataggcatgc 120
atcccacca cctagctatg acccaatcct tataaacact agatattctc cctggcgcgc 180
gtt 183

<210> 313
<211> 255
<212> DNA
<213> Pinus taeda

<400> 313
gcggaagcct agacaatcat taactgaaga tctgtaagcc atgacaagac gaataaaaacg 60
aagcacggcg caaccagcgt gaatattgac gccttaattt cattcaactg ggttgccgat 120
tctttattcc tcaacaagtg ttcgatagct tcacatacgc aaggcccctt ttactctcac 180
cttcattggt taatgctgta accgtcgaag gttgatgaaa ggacttggat gatgatgttg 240
ccaaaaaaaa aaaaa 255

<210> 314
<211> 184
<212> DNA
<213> Pinus taeda

<400> 314
gcggaagcct gctcaacacc tggtatagtc atttcttggt tccttttctc aattttctct 60
ttcgaatgac cgcattgaaa ttcaggctgc ccaacgcgtt tttgttttca caattaattt 120
ttgaatcata cgcgaagatc atgatgagaa tgggtgtgga aaaaaactgt ttgtaaatat 180
ttag 184

<210> 315
<211> 345
<212> DNA
<213> Pinus taeda

<400> 315
atatcacatt accattcaaa aaataaacat tttacaaaat acaattccat aacaattttc 60
ttccctgttc caacctccac aaaagtaaat gatcgtataa gaaattaact accaacaata 120
atcccagaat taaaggaaga catccccaaa aaagatgtaa ctttcaaaac cggatgactt 180
cactcctgcc attgcaccta gtcatttact tctcagagga gtttggccct ttcttctttc 240
caaaagtaac cactgcggta acaaaccggc ggttgatttg cattcgcttg taggcgcggc 300
ctctaggctt cttcttctgt cttgtttggc caccttaggg tccgc 345

<210> 316
<211> 292
<212> DNA

<213> Pinus taeda

<400> 316

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gcggaacgcct tgggtacaatg gacttgcaaa aataaaatga gttctcattt gtgggtgaga 60
tgcggatatt ttatgcatag gcacttcatg gagatgtggt ttataaacgc catcttaata 120
tctgtacctt ttactttcaa aatatgaagg caagatggaa agctactcat ctgttggtgaa 180
gtcagaatgt tggtagcggt tgggctctga aagtaagaaa ctttttgatt gggttaatta 240
aatgaggggaa tttgcctggt ttccctcttc cttccgaaaa aaaaaaaaaa aa 292
```

<210> 317

<211> 298

<212> DNA

<213> Pinus taeda

<400> 317

```
gacgttgtaa aacgacggcc agacaatatt ggaagggaga aaggcgccag caggggttgag 60
gggaagaaat gcataatgac atatataatg agatctattt gtatacgata ttacgggtac 120
gatcgatgat tcgagctacg atcccatacg acgctaaagc gtaattacat atataataga 180
tgcatttcag aatgacttat ctatttcatt acgcgatatt atatacgtaa ttacgtatat 240
aattgcagag atctcaccga ccaaccaaat agtctttcat ttcattcccag gcgtccgc 298
```

<210> 318

<211> 337

<212> DNA

<213> Pinus taeda

<400> 318

```
gcggaacgcct gtatcactag aggtgaatac tcagcaagca aaactgaagg atattattga 60
aaaagctgtc aaggctaaat tgggtgtcaa ttccccattg atcatgcatg gttctacact 120
tttgtttgag tccggtgatg acattgagga agatgttgct gcacattatg cacaaaactt 180
agagaagacg ttagcagaat ttccagttcc aatcacaaat ggtgttattc ttacagtata 240
ggactaccag caagagttct tatgcagtat taatattaag cacagagatg actttgatga 300
ggagtcaggt ggcattgtac tgtctggagg cgtccgc 337
```

<210> 319

<211> 237

<212> DNA

<213> Pinus taeda

<400> 319

```
gcggaacgcct ccttgtagat accatacatg agtctaagat caaaatcata caagaagagc 60
ttcattccgg gctcacctt ttctacaagc tcctttttgg ctggtggaaa gccaaacact 120
ctgtatcgga aacactcctg cctagtttca gaattacaca taaaaatcaa gccggcaaac 180
ctatctttgc cactgccatc ttcattgttt gcgtcctggc cgtcgtttta caacgtc 237
```

<210> 320

<211> 484

<212> DNA

<213> Pinus taeda

<400> 320

```
gcggaacgcct tactaaaacg acggccagat gtgtaatggg gaaaatgtgt catgatagtt 60
gggtacaaat aacgagccac ctgctctatg ttttcgaagt tttctgttgg atttgtccgg 120
gtgagagagc gttcgttcgt tgcgcgagag gggcaaaatg ctgagcgtgg ggaattgcc 180
```

```

ttgccgcccc tgggaagtgcc gcacgaacgc gatcacatctt aaatcaccat ttacttcac 240
atcaccatgg ttaaatagcag tccttgctcc ttcaaacagg aacttcagat ccttcaagct 300
cgaaatctcc gcctctgctt cctcgaagac aagactctgt gaggaggaag cgcagcagct 360
gagcttagcg gatctgctga agcccgggtg cctcgccccc gatgggttct cgtacaagga 420
gaactttacc atacgctgct atgaagtccg agttaaaccg cactgccacc attgaggcgt 480
ccgc 484

```

<210> 321

<211> 248

<212> DNA

<213> Pinus taeda

<400> 321

```

gacgttgtaa aacgacggcc agcaaccaa taaacccac atgtgctcaa tgttttagta 60
taaaaggaga tgacttaaga gtcatttcac acacacttct atcttgattt ctctccactt 120
gtcttgggtt ttagtggaag agaaatctag gagtggaagc cctagacgtt ggaggataag 180
aaggcaaccc tagaaggcag agctaacgct atcctaaggc aaccctaacg ctatcctaag 240
gcgtccgc 248

```

<210> 322

<211> 401

<212> DNA

<213> Pinus taeda

<400> 322

```

gcggagcgct gctcagcacc tggtatagtc atttcttttt tcctttttct cattttttct 60
tttogaatga ccgcaatgaa attcaggctg cccaacgcgt ttttgtttct acaattaatt 120
tttgaatcat acgcgaagat catgatgaga atgggtgtgg aaaaaaactg tttgtaaata 180
tttaggtgac caacaatttt catgattgca atctaaagtt gataattgat ttatcgggtc 240
gacatttgta attattaaca cggaatatct gaggcttaca atttttggat tgtaaatatt 300
taggtgacga acaatttttca tgattgcaat ctaaagttga caattgagtt atcgtgtcga 360
catttgtaat tattaacaca caaatctat gaggcgtccg c 401

```

<210> 323

<211> 493

<212> DNA

<213> Pinus taeda

<400> 323

```

gcggagcgct catcaatcca tgggtgtaca cgcgccttca aagcggcttc cttatgtcgc 60
gcagcgtcta cttgttcctt gagcgtttt ccttgctaca tccgcgcgag cctctgtgca 120
agggccactg tctgcgcggt ccctttaact tcgtcgtact tctgctgcag ctcacgtgtc 180
tctattttcta agtgctatat atttgggtcc tctgcatag tagtgaactt cgaacgactc 240
ctcaaatagc caggtgtagt ctttcattgc actattgat tccactatc ctgctataat 300
ggcgctaaca tgctgttcct tcacctttgg cggagttgaa ggctgcgcct tcttgagct 360
cggttatttg aagctgaacc ttgggcatat ctctctcac ctctgcatc cctgcttcg 420
agtttctgga tgcacgcctc cactgggtct tctgctggga tgggcaactc taagaccaac 480
tggtatgcgt cgc 493

```

<210> 324

<211> 143

<212> DNA

<213> Pinus taeda

<400> 324

```

gcggaacgct tcttcaatcc atcaggcctg attaatgtat tgaccttctt tgtctgaatg 60
tcatacatctt ttttcaactgc atccttgatc ttcttctgtt cttgctttct atcctttctc 120
ttgctttcta tcttttctct ggc 143

```

<210> 325

<211> 314

<212> DNA

<213> Pinus taeda

<400> 325

```

gacgttgtaa aacgacggcc agcaaaattg atataaagaa tagacacatc gactcaaagt 60
aagtgaacta acagttcatt aattcatgtc agcttgaatg catggacata caccataaaa 120
taggcagttg gggtcaccca aaagaacata gaaacatctc gcatctctct gaagaaactc 180
ggatgggtac aggtctgtga cttcgcatat tttgaaggag cactctcttg gataagtaca 240
atataggtag catctcggac tcgcctgaaa tctcgcaaag aagtctcatt ctctctcttg 300
ttacaggcgt ccgc 314

```

<210> 326

<211> 332

<212> DNA

<213> Pinus taeda

<400> 326

```

gacgttgtaa aacgacggcc agaagcatca ataaacaaaa tgacagatta acaagttctc 60
tcttaactct aagagaatac atcaacatcc aagtaaagtc ataacacatt tacaaaatgg 120
tgccacggta tccattctct gtaacaaggt ttttctgaaa atagttttcc tcttatctat 180
gtaactcttc atagggatgc ctgtgtcaac gtgccatatt cccaaatttg gccacaatca 240
aaccttcttc attagaagaa acaatctctg gtctagctca aaattggcaa aatttcacgc 300
atctcccttt aacatcatta gaaggcgtcc gc 332

```

<210> 327

<211> 1098

<212> DNA

<213> Pinus taeda

<220>

<221> modified_base

<222> (879)

<223> a, t, c, g, other or unknown

<400> 327

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gggagatgct aatttgaagc ccttctctga aggtggacaa ttccagcagc agtgggtctaa 60
agccccaata tggctataga aattcttctg ggggttgacac ctatggaaga gggtcggaga 120
ggacgaagct gtggatcgct cttaccatct gtgcggaagg tggtagcaga attcattgga 180
acgttcttcc tcatatttgt aggatgcgga tctgtcgttg ttgataagat aagcaacggt 240
tccataactc atcttgggtg gtcgcttgta tggggaatgg cggccatgat tgtaatttat 300
tccataggcc atatttcttg agctcatttg aatcctgcag tgacgttggc ccttgcggct 360
gtgaagagat ttccatgggt tcaggttcca ggctacatag tagtcaagt atttggatcg 420
atatctgctg ggtttctcct acgtttcatg tttggagaag tggcattcat gggagccaca 480
gttccttcag gctcagaaat gcagtccttc gctttggaaa ttattactac gtcattgttg 540
gtggttggtg tttctgcagt cgccactgat acaaaagcgg tgggtgaatt gggaggttca 600
gcaattggag cgaccatcgc aatgaatgta gccatatccg gaccaatctc aggagcttca 660
atgaatccag caaggacaat aggatccgca gtggctggca acaaatatac aagcatttgg 720
gtttacatgg ttgggcctgt aatcggtgcg ctaatgggtg caatgagtta taacatgatt 780

```

```

agagagacaa aaatgtccga aagggagatt atgaagagtg ggtcatttgt taaggacatg 840
ggctccagcg aatcaacagc ataacaactt agagatttnt tgcattcccg agacgggatac 900
cagtgatagt ggagagtagt cataataaga tttgtgaaaa tgtttggtga gattaatgtg 960
taaaattcaa tccatcaacc atgaagcgaa ctgcattccg tttttaaatg tttattggat 1020
ttgaattaat aaacagctta tacgtgaaaa tccctacttt atgtacggaa aaaaaaaaaa 1080
aaaaaaaaa aaaaaaaaaa                                1098

```

<210> 328

<211> 992

<212> DNA

<213> Pinus taeda

<220>

<221> modified_base

<222> (762)

<223> a, t, c, g, other or unknown

<220>

<221> modified_base

<222> (774)

<223> a, t, c, g, other or unknown

<220>

<221> modified_base

<222> (778)

<223> a, t, c, g, other or unknown

<220>

<221> modified_base

<222> (808)

<223> a, t, c, g, other or unknown

<220>

<221> modified_base

<222> (828)

<223> a, t, c, g, other or unknown

<220>

<221> modified_base

<222> (849)

<223> a, t, c, g, other or unknown

<220>

<221> modified_base

<222> (881)

<223> a, t, c, g, other or unknown

<220>

<221> modified_base

<222> (898)

<223> a, t, c, g, other or unknown

<220>

<221> modified_base

<222> (936)

<223> a, t, c, g, other or unknown

<220>
 <221> modified_base
 <222> (945)
 <223> a, t, c, g, other or unknown

<220>
 <221> modified_base
 <222> (953)
 <223> a, t, c, g, other or unknown

<220>
 <221> modified_base
 <222> (967)
 <223> a, t, c, g, other or unknown

<220>
 <221> modified_base
 <222> (977)
 <223> a, t, c, g, other or unknown

<220>
 <221> modified_base
 <222> (984)..(985)
 <223> a, t, c, g, other or unknown

<400> 328
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 ttcaagtcct atgaaagcta gattggagaa ttgcaaagaa atctaatactc cgtttagttgt 120
 cccaaccact gactcgcacc caatcagagt atattaaagt taaagattat ataaaggtaa 180
 attgaacatt tataaaaatct taaatgtatt tttagagtta aacattatat agaataatta 240
 atgtagtata gatataataa aatattaaaa attaatctct ctttactatc aagtgaataa 300
 aaataaaaaa taaatgtaag acaatataat aaaagacttg tttttagtgc attttttgga 360
 ctcttcgtta ttgtgtggta ttgtgttatt taaactgac tttttactgt atatatggat 420
 gggttaccca tcaaacttgt gatttcaata aattcctccc ggattttaga gaaattagac 480
 cataaaaact cacgaaaaaa attttagacc ataaaaactc acgaaaaaaa cttcccaaaa 540
 atcacgctaa aaacaactag ataaaaaaat acccatcttt gatgatgtgg atagtgcacg 600
 cctattccaa actatcacct aaattgtaag ttacatgcat aacacgatga cctcatctat 660
 acgttgtgcc aaataaagggt atgaccgttc aaactaaaga atcaacgagc tccaacgcat 720
 cttttgctgt ggggggattc tcacggctta acattcatgg anccgattac ctttctancc 780
 aaccaagggt tttaacctgg aacaaatncc aaaccaatta ccagcttnac aaatcaaccg 840
 agccgcccna ccgggatcat tttggtcaag tctcgaaaac nggcattggg tatatggnat 900
 atggaattgg aattggatca atggtaacct tggganaagc ttaanttggg aancctttt 960
 ttttganggg ggccaanttc ccgncccccc gg 992

<210> 329
 <211> 996
 <212> DNA
 <213> Pinus taeda

<220>
 <221> modified_base
 <222> (933)
 <223> a, t, c, g, other or unknown

<220>
 <221> modified_base
 <222> (952)

<223> a, t, c, g, other or unknown

<220>

<221> modified_base

<222> (982)

<223> a, t, c, g, other or unknown

<400> 329

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atactcaagc tatgcatcca acgcgttggg agctctccct atggctcgacc tgcaggcggc 60
cgcgaaattca ctagtgatta gatggtaaga gcgatccaca gcttcgtcct ctccgaccct 120
cttccatagg tgcaaccccc agaagaattt ctatagccat attgaggctt tagaccactg 180
gtgctggaat tgtccacctt cagagaaggg cttcaaatta gcatctccaa gttacattga 240
tctattctat tcatatacat ataacaatgc tgcttcgaga ctgacaaaat gatccgttgg 300
cgctcgttga ttgttagctg taattgtttg gattgttcag ttaaagcctt gttggtagga 360
ggtaatcggg catgaatggt agccgtgaga atcctcacag caaaagatgc gttggagctc 420
ggtgattctt tagtttgaac ggtcatacct ttatttggca caacgtatag atgagggtcat 480
cgtgttatgc atgtaactta caatttaggt gatagtttgg aataggctgt cactatccac 540
atcatcaaag atgggtatatt tttatctagt tgttttttagc gtgatttttg ggaagttttt 600
ttcgtgagtt tttatggtct aaaatttttt tcgtgagttt ttatggtcta atttctctaa 660
aatccggggag gaattttattg aaatcacaag tttgatgggt aacccatcca tatatacagt 720
aaaaagatca gtttiaccagc ccgggcccgtc gaccacgcgt gccctatagt aatcgaattc 780
ccgcggccgc catggcgccc gggagcatgc gacgtcgggc ccaattcgcc ctatagttag 840
tcgtattaca attcactggc cgcgtttaca cgtcgtgact gggaaaccct gcgttaccac 900
ttaatcgctt gagcacatcc ccttttccag tngtataaac gaaaaggccc cnccatcgcc 960
tttcaaaaat tggcaactga angggaagga cccctt 996

```

<210> 330

<211> 1041

<212> DNA

<213> Pinus taeda

<220>

<221> modified_base

<222> (918)

<223> a, t, c, g, other or unknown

<220>

<221> modified_base

<222> (934)

<223> a, t, c, g, other or unknown

<220>

<221> modified_base

<222> (943)

<223> a, t, c, g, other or unknown

<220>

<221> modified_base

<222> (991)

<223> a, t, c, g, other or unknown

<220>

<221> modified_base

<222> (1009)

<223> a, t, c, g, other or unknown

<220>

<221> modified_base
 <222> (1025)..(1026)
 <223> a, t, c, g, other or unknown

<220>
 <221> modified_base
 <222> (1030)
 <223> a, t, c, g, other or unknown

<400> 330
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 ccgcgaattc actagtgatt agatggtaag agcgatccac agcttcgtcc cctccgaccc 120
 tcttccatag gtataaaacc cagaatttgg tgagcaggaa gaatttccat agccatattg 180
 aggctttaca ccaactgctgc tcgaattgtc caccttcaga gaagggttc aaattagcat 240
 ctccaagtta catggatcta ttctattcat atatttataa caatgctgct tcgagactga 300
 caaaattatt tgttggcgct tgttcacgt tagctgtaat ggtttggatt gttcagtgtg 360
 ggaccagccc gggccgtcga ccacgcgtgc cctatagtaa tcgaattccc gcggccgcca 420
 tggcggccgg gagcatgca cgtcggggccc aattcgccct atagtgagtc gtattacaat 480
 tcactggcgg tcgtttttaca acgtcgtgac tgggaaaacc ctggcggttac ccaacttaat 540
 cgccttgcag cacatccccc tttegccagc tggcgtaata gcgaagaggc ccgcaccgat 600
 cgcccttccc aacagttgcg cagcctgaat ggcgaatgga cgcgccctgt agcggcgcat 660
 taagcgcggc ggggtgtggtg gttacgcgca gcgtgaccgc tacacttgcc agcgccctag 720
 cgcccgtccc tttecgcttc ttcttccct tctcgccacg ttcgccggct ttcccgtca 780
 agctctaaat cgggggcttc ctttaggggt ccgatttaat gctttacggc accctcgacc 840
 ccaaaaaaac ttgattagggt gtgatgggtc acgtagtggg ccacgcacct tgatagacgg 900
 tttttcgccc tttgacgntg gaagtccacg tttntttaat agngggactc ttggttcaaa 960
 atgggacaac acttcaaacc ttttttgggg ntattttttt tgatttatna agggattttt 1020
 gccgnntttt gggccttttg g 1041

<210> 331
 <211> 993
 <212> DNA
 <213> Pinus taeda

<220>
 <221> modified_base
 <222> (939)
 <223> a, t, c, g, other or unknown

<220>
 <221> modified_base
 <222> (952)
 <223> a, t, c, g, other or unknown

<220>
 <221> modified_base
 <222> (965)
 <223> a, t, c, g, other or unknown

<220>
 <221> modified_base
 <222> (973)
 <223> a, t, c, g, other or unknown

<220>
 <221> modified_base
 <222> (993)

<223> a, t, c, g, other or unknown

<400> 331

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cgcggaattca	ctagtgatta	ctatagggca	cgcggtggtcg	acggccccgg	ctgggtttcaa	120
taaattcctc	ccggattttta	gagaaattag	accataaaaa	ctcacgaaaa	aaatttttaga	180
ccataaaaac	tcacgaaaaa	aacttcccca	aaatcacgct	aaaaacaact	agataaaaaa	240
atacccatct	ttgatgatgt	ggatagtgac	agcctattcc	aaactatcac	ctaaattgta	300
agttacatgc	ataacacgat	gacctcatct	atacgttggtg	ccaaataaag	gtatgaccgt	360
tcaaactaaa	gaatcaacga	gctccaacgc	atcttttgtc	gtgaggattc	tcacggctaa	420
cattcatgac	cgattacctc	ctaccaacaa	ggctttaact	gaacaatcca	aacaattaca	480
gctaacaatc	aacgagcgcc	aacggatcat	tttgtcagtc	tcgaagcagc	attgttatat	540
gtatatgaat	agaatagatc	aatgtaactt	ggagatgcta	atgtgaagcc	cttctctgaa	600
gggtggacaat	tccagcacca	gtggtctaaa	gcctcaatat	ggctatagaa	attcttctgg	660
gggttgacacc	tatggaagag	ggtcggagag	gacgaagctg	tggatgctct	taccatctaa	720
togaattccc	gcggccgcca	tggcggccgg	gagcatgcga	cgtcggggccc	aattcgccct	780
atagtgaagtc	gtattacaat	tactggccg	togttttaca	acgtcgtgac	tgggaaaacc	840
ctggcgtagc	caacttaatc	gccttgagc	acatcccctt	tcgcagctgg	gtaatagcga	900
aaaggccgca	cgatgccttc	cacagtgcc	actgatggng	aaggaccccc	tntcgggcat	960
taacncggggg	ggnggggttc	cccccgccct	ccn			993

<210> 332

<211> 1014

<212> DNA

<213> Pinus taeda

<220>

<221> modified_base

<222> (994)

<223> a, t, c, g, other or unknown

<220>

<221> modified_base

<222> (998)

<223> a, t, c, g, other or unknown

<220>

<221> modified_base

<222> (1014)

<223> a, t, c, g, other or unknown

<400> 332

atactcaagc	tatgcatcca	acgcgttggg	agctctccca	tatggctcgac	ctgcaggcg	60
ccgcgaattc	actagtgatt	agatggtaag	agcgatccac	agcttcgtcc	tctccgaccc	120
tcttccatag	gtgcaacccc	cagaagaatt	tctatagcca	tattgaggct	ttagaccact	180
gggtgctggaa	ttgtccacct	tcagagaagg	gcttcaaatt	agcatctcca	agttacattg	240
atctattcta	ttcatataca	tataacaatg	ctgcttcgag	actgacaaaa	tgatccgttg	300
gcgctcgttg	attggttagct	gtaattgttt	ggattgttca	gttaaggcct	tggttgtagg	360
aggtaatcgg	tcattgaatgt	tagccgtgag	aatcctcaca	gcaaaagatg	cgtcggagct	420
cgttgattct	ttagtttgaa	cggtcatacc	tttatttggc	acaacgtata	gatgagggtca	480
togtgttatg	catgtaactt	acaatttagg	tgatagtttg	gaataggctg	tcactatcca	540
catcatcaaa	gatgggtatt	tttttatcta	gttggtttta	gcgtgatttt	gggggaagttt	600
ttttcgtgag	tttttatggt	ctaaaatttt	tttcgtgagt	ttttatggtc	taattttctct	660
aaaatccggg	aggaatttat	tgaaatcaca	agtttgatgg	gtaacccatc	catatataca	720
gtaaaaagat	cagttttaa	aacacaatac	cacacaataa	cgaagagtcc	aaaaaatgca	780
ctaaaaacaa	gtcttttatt	atattggctt	acatttattt	tttactttta	ttcacttgga	840
tagtaaaaaga	gaaattaatt	tttaatat	tattatatct	atactacatt	aaatattcta	900

tataatgtta actctaaaaa acatttaaga tttatatatg gtcaattacc cttatataat 960
 ctttaacttt aaatccctga tggggggccaa taanggtngg gaaactaacg gaan 1014

<210> 333
 <211> 640
 <212> DNA
 <213> Pinus taeda

<400> 333
 actatagggc acgcgtgggc gacggcccg gctggtttca ataaattcct cccggatttt 60
 agagaaatta gaccataaaa actcacgaaa aaaatttttag accataaaaa ctcacgaaaa 120
 aaacttcccc aaaatcacgc taaaaacaac tagataaaaa aatacccatc tttgatgatg 180
 tggatagtga cagcctattc caaactatca cctaaattgt aagttacatg cataacacga 240
 tgacctcatc tatacgttgt gccaaataaa ggtatgaccg ttcaaactaa agaatcaacg 300
 agctccaacg catcttttgc tgtgaggatt ctcacggcta acattcatga ccgattacct 360
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 caacggatca ttttgtcagc ctcgaagcag cattgttata tgtatatgaa tagaatagat 480
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<400> 336

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13

<210> 337

<211> 13

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13

<210> 338

<211> 20

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507